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ABSTRACT

This resource book covers a variety of topics on special education and rural education research and practice. The document is a collection of articles and resource listings. The articles are categorized into: (1) general (effective schools, special education, rural schools); (2) recruiting, retaining and training teachers; (3) financing rural special education; (4) policy and law; and (5) appropriate technology. Specific topics within these categories include: (1) integration of general and special education; (2) vocational education for special populations; (3) social skills assessment; (4) American Indian education; (5) at-risk students; (6) early childhood special education training; (7) special education staffing in rural areas; (8) support personnel training for serving rural disabled students; (9) teacher competencies in adapted physical education; (10) personnel standards for Part H of PL 99-457 (serving infants, toddlers, and their families); (11) legal responsibility for funding the education of the severely disabled; (12) the politics of special education; (13) the cultural context of policy; (14) distance education; and (15) microcomputer use in special education. Following the articles is a section on promising practices and case studies of effective schools. The final sections contain a list of resources and a bibliography on rural special education. (KS)

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SPECIAL EDUCATION IN RURAL SCHOOLS

A Resource Notebook on Rural Schools

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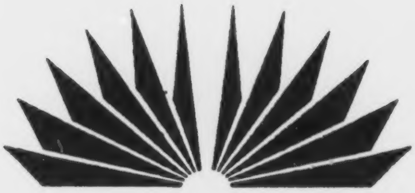

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PREFACE

Preface

The **Special Needs in Rural Education Resource Notebook** covers a variety of topics on special education and rural education research and practice. The notebook is designed to disseminate information, resources and literature to rural educators, educational authorities, practitioners and associations. By providing a comprehensive knowledge base, the National Center for Effective Schools encourages networking and resource sharing at a national level.

The **Special Needs in Rural Education Resource Notebook** began in March 1991 as an initial investigation of the research and literature that is presently available on this topic. From the enthusiastic and overwhelming response that the National Center for Effective Schools received on this subject, the notebook grew to include promising practices and a list of helpful resources.

Too often educational resources offer a perspective that excludes the rural and small school reality - not to mention that of the specials needs population. At a glance, educational scholars and policy-makers assume that all students have similar needs. A closer look reveals substantial financial, technical and professional discrepancies between rural and small schools, suburban and urban schools. Professional development and teacher recruitment and retention are aims not easily achieved; the appropriate use of satellite technology is costly and scarcely available; equitable funding cannot be assumed. Experiences and problems unique to special education in rural and small schools are often underrepresented in discussion, policy-making, fund allocation and research.

This **Resource Notebook** is available to educators to provide research-based knowledge, information on effective practices, and connections to others around the country. We hope it will ultimately serve the children of rural America.

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Unusually Effective Schools

A Review and Analysis of Research and Practice

by

Daniel U. Levine, Ph.D.
and
Lawrence W. Lezotte, Ph.D.

The National Center for Effective Schools Research & Development
A resource for assuring quality and equality in Education
March, 1990

V

CREATING EFFECTIVE SCHOOLS

BEFORE PROCEEDING TO DISCUSS considerations involved in successfully enhancing the effectiveness of groups of schools on a planned and systematic basis, we should acknowledge that prior to the 1980's most of the unusually effective schools we had encountered in person or seen described in the literature had been isolated institutions which attained this status basically on their own with little or no external assistance or participation in an effective schools "project." Thus our experiences largely coincide with that of Stringfield and Teddlie (1987), whose research on unusually effective schools in Louisiana led them to summarize the general "process of becoming a highly effective school" (1987:11) as follows:

> **Step 1.** An instructional leader or leadership group, ideally though not necessarily including the principal, emerges or, more often, arrives. This [person or group has]...a vision for what the school and its students could become...[that] involves higher levels of learning and a more generally 'humanistic' set of processes than current realities would seem to justify. Though they [the leaders] may not consciously know it in the beginning, they are prepared to work very long hours for years to achieve their vision...
>
> **Step 2.** [The principal chooses] new teachers and aides with great care...[looking] for 'spark' or 'energy'...[rather than] years of teaching experience or advanced degrees.
>
> **Step 3.** Either alone or with the aid of their staff the instructional leader(s) conduct an accurate instructional audit of the school...[This part of the process generally addresses the following set of questions]:
>
> a. Is the school a safe place for children and staff? If no, this becomes priority number 1. If yes, go to b.
> b. Is the school a healthy and orderly place? If no this becomes the top priority, else go to c.
> c. Is the school achieving 'the basics'?...If not, this becomes the next goal...[with the focus] here not on drudgery...
> d. What is the current status of our text book series and supplemental readers (within and across grades)? Our 'teaching' and homework? Curriculum and instruction?...
> e. Is the school providing additional, enriching, stimulating activities for its students...[and] involving the larger community in ways that are good for the students and for the community itself?
>
> **Step 4.** In areas where multiple resources are available, effective principals become increasingly active in targeting career development for some, occasionally all staff. This targeting is largely due to their frequent in-class observations.
>
> **Step 5.** The level of principal awareness of research on teacher effectiveness varied...from moderate to non-existent. But all exercised the common sense notion that hard work leads to success...Teachers who do not meet reasonable instructional standards are put on probation, provided assistance, then either exhibit improvement, transfer to another school/district, or are fired.
>
> **Step 6.** A uniform homework policy...[and] a minimum daily homework expectation [often are established].
>
> **Step 7.** Special programs such as Chapter 1 and Special Education are thoughtfully coordinated with the regular program (Stringfield and Teddlie, 1987:11-13).

Conversely, many schools that have participated in effective schools projects or similar school improvement efforts have failed to register substantial and lasting gains in student achievement or other major indicators reflecting student performance. On the other hand, many other schools have improved substantially while participating in such efforts (McCormack-Larkin and Kritek, 1982; Clark and McCarthy, 1983; Eubanks and Levine, 1983;

Freeborne, 1984; Taylor, 1984; Gauthier, Pecheone, and Shoemaker, 1985; Lezotte and Bancroft, 1985a; Everson, Scolay, Fabert, and Garcia, 1986; Nagel, 1986; Achilles, 1987; Office of Elementary, Secondary and Continuing Education, 1987; Groom, 1989; Murphy and Waynant, 1989), and much has been and is being learned concerning considerations and issues that should be addressed in carrying out a multi-school project to enhance their effectiveness. The remainder of this section will review some of the most important guidelines we believe have emerged and several key issues that are still unresolved in formulating and carrying out systematic efforts to enhance the effectiveness of groups of schools participating in significant improvement projects.

1. ***Substantial staff development time must be provided for participating faculties, preferably at least in part during the regular teacher work day.*** In agreement with research indicating that teachers' acquisition and successful utilization of new or improved instructional approaches requires considerable time and practice extending to coaching and practice at the classroom level, staff development must be an integral and ongoing activity in projects to make schools more effective. The large magnitude of time required to provide teachers with significantly more effective methods for improving students' comprehension skills has been underlined by Kurth and Stromberg (1984), who worked with a small group of teachers to promote more independent reading in a suburban elementary school and found that success depended on "continuous, almost Herculean" staff development efforts (1984:2). School districts that have made progress in improving student achievement through effective schools projects have utilized such approaches for delivering staff development as the following:

- stipend budgets for in-service training after school, on Saturdays, and/or during the summer (Eubanks and Levine, 1987).
- establishment of a team or "cadre" of experienced substitute teachers to release all or part of a faculty for sustained staff development.
- extension of the teacher and administrator work year to allow more time for planning, and staff and organization development (Stevens, 1988).
- provision of a full-time staff developer and/or designation of an assistant principal with particular responsibility and time for staff development in reading and language arts (Saxl, Kaplan, Robinson, and Springer, 1989; Levine and Sherk, 1990).
- operation of a district in-service center which groups of teachers or even entire faculties can attend for one or more weeks at a time.
- reduction of teachers' duty periods to provide time for staff development and collaboration during the regular school day (Glickman and Pajak, 1986).
- creation of "early closing" days when the student day is shortened in order to provide staff development and related effective schools activities (Murphy and Waynant, 1989).
- "early dismissal" of students during the last week of school to provide more time for staff and organizational development (Carter, Madison, Hall, and Lockamy, 1989).
- provision of a full-time "reading resource" specialist to work with a high school faculty released from planning and/or duty periods through assignment of substitute teachers (Monahan, 1988; Levine and Sherk, 1990).

2. ***Faculties engaged in effective schools projects must not wait very long before beginning to address issues involving improvement of instruction.*** As discussed elsewhere in this monograph, faculties should place some stress on general climate, academic press, orderly environment, and related effectiveness correlates that almost always need some attention and sometimes should be treated as the highest priority on which other improvements are dependent. Unfortunately, some faculties participating in effective schools projects tend to become fixated on climate, parent involvement, or other correlates which do not directly involve instruction (Pecheone and Shoemaker, 1984; Lezotte and Bancroft, 1985b; Arbuckle, 1986; Azumi, 1987; Lezotte and Taylor, 1989; School Effectiveness Unit, 1989; Green, undated), perhaps in part because instructional issues are more difficult to address, involve fundamental intra-faculty differences in philosophy and values, and/or tend to require more resources than do climate improvements (Pecheone and Shoemaker, 1984). In addition, substantial change in instruction frequently requires departures from district or state policies and

regulations. As we have tried to make clear throughout this monograph, school effectiveness seems to depend on a mixture of key characteristics that involve instructional arrangements, active learning, and other related variables, not just a positive climate, appropriate monitoring of student progress, or other isolated aspects of schooling. In particular, school improvement plans should pay particular attention to grouping, higher order skills, compensatory services, pacing, and other key aspects of instruction (Levine and Leibert, 1987).

Related to this guideline, Benore (1989) has reviewed developments in a 28 district effective schools project in Michigan and provided the following advice concerning the importance of addressing instruction in the earliest stages:

> Beware of the tendency for teams to focus on "doing something about the correlates' without ever paying attention to student outcomes. The correlates are only a vehicle toward . . . improved student performance . . . to avoid having correlate improvement become the major goal, gather and analyze the student outcomes data prior to administering the correlate assessment. State all improvement goals in terms of student performance indicators.

3. ***Conversely, faculties embarking in an effective schools project must avoid getting bogged down in elaborate schemes to train all staff in the details of a particular instructional technique or approach at the beginning of the project.*** This guideline is of great importance for three reasons. First, significant attention must be given to the larger effective schools framework and set of correlates during the critical first stages of a project. Second, intensive training in a new instructional approach frequently will preoccupy the faculty and drain their mental and physical energy. Third, imposition of a particular instructional approach such as a specific lesson delivery sequence or cooperative student learning early in a project frequently results in mindless implementation that tends to discredit the concept of instructional reform. Thus considerable time and effort during the first year should be devoted to general awareness and to key effective schools correlates involving expectations and requirements for students, grouping arrangements, alignment of curriculum, instruction, and testing, availability of adequate instructional materials, and other prerequisites for success in implementing instructional techniques. Benore (1989) has captured some of this guideline in deriving the following lessons from a multi-district effective schools project in Michigan:

> Though effective-teaching training models are important in building instructional leadership skills, start the program with a framework of Effective Schools Research. After the SI [School Improvement] team has written the improvement plan, effective-instruction training can be added as a strategy within the plan. Attempting to introduce Effective Schools and effective-teaching research simultaneously proved confusing and too overwhelming for most participants in earlier projects.

4. ***Improvement goals must be sharply focussed to avoid teacher and school overload.*** One of the most common reasons why effective schools projects fail is because they try to do too much in too short a time (Lezotte and Bancroft, 1985b; Henderson and Lezotte, 1988). This is particularly the case when staff development, curriculum development, and other resources are limited (as they almost always are), but the overload problem is present even when resources are substantial, and in some cases resources contribute to the problem by encouraging school officials to try too much at one time. Similarly, there is reason to believe that many inner city schools are hampered by the presence of too many compensatory programs to carry out effectively (Green, undated).

One common example of counterproductive overload involves school improvement projects in which faculties of inner city elementary schools are expected to improve instruction in reading, language arts, math, science, and social studies, all in one year (Levine, 1985). Overload of faculties participating in effective schools projects is but one small subset of a widespread national and perhaps international tendency to expect teachers to improve all aspects of instruction within a very short period of time. Thus success in an effective schools project sometimes may depend on bringing about an "organized abandonment" of numerous existing activities which are fragmented and incoherent.

5. ***Significant technical assistance must be made available to faculties participating in effective schools projects.*** Primarily in the form of specialized personnel, assistance is critically important in helping faculties assess their current levels of effectiveness and problems, develop the capacity to work together productively, and initiate and carry out significant changes in educational programming and delivery. Depending on the nature, scope, history, stage, and origins of a given effective schools project,

technical assistance may involve state department of education or central office specialists, other external consultants, and/or school staff or organizational development personnel (for examples, see Pajak and Glickman, 1989).

For example, Freeborne (1984), Pecheone and Shoemaker (1984), Arbuckle (1986), Shoemaker (1986), and Kelly (1989) have described substantial specialized assistance made available by the Connecticut, Maine and New York State Departments of Education; Clark and McCarthy (1983), Eubanks and Levine (1983), and Kelley and Willner (1988) described arrangements for technical assistance in New York City projects which sometimes required a facilitator in each school for the equivalent of one day a week or more; Groom (1989) portrays a successful big city project in which three full-time effective schools staff and other external resources as well as a full-time instructional specialist at each school are available to eighteen elementary schools; Kopple's (1985) assessment of school improvement efforts in Philadelphia concluded that a facilitator must be present in the school at least one day a week for several years; and Murphy and Waynant (1989) describe somewhat similar arrangements for a project involving the predominantly black elementary schools in a large suburban district. As in the case of staff development time and overload considerations discussed above, requirements for substantial specialized assistance to carry out effective schools projects mirror requirements that are necessary for the success of any successful significant school improvement project (Cox, French, and Loucks-Horsley, 1987; Richardson-Koehler, 1987).

Part of the reason why technical assistance and large amounts of staff development time are essential is because true school effectiveness is increasingly defined in terms of improvement in students' comprehension and other higher order skills (Anderson, 1985; Herber and Nelson-Herber, 1988; Honig, 1988; Peterson, 1988; Cooper and Sherk, 1989; Pressley, 1989). On the one hand, recently developed instructional methods for improving comprehension have been sufficiently widespread and impressive to constitute a virtual "revolution" in educators' capacity for attaining this goal (Pearson, 1985). On the other hand, there is "essentially nothing in instructional materials or in teacher training [until very recently] that helps the teacher learn what to do when the child does not understand" (MacGinite and MacGinite, 1986:258). One result of this discrepancy is that teachers in most faculties will require large-scale assistance of various kinds in order to enhance the effectiveness of their instruction.

6. ***Effective schools projects should be "data-driven" in the sense that appropriate information should be collected and utilized to guide participants in preparing and carrying out plans for improvement.*** As we pointed out in our preceding section dealing with "Achievement Criteria of Effectiveness," faculty attention in effective schools projects should include a focus on discrepancies between advantaged and disadvantaged students in acquiring key learning skills, particularly those involving higher order learning. School-level analysis of such data not only provides a basis for designing pertinent improvement efforts, but, equally important, calls attention to the educational outcomes to which school and district personnel attribute priority importance (Lezotte and Bancroft, 1985a). Instruments that can be most useful in this regard are discussed elsewhere in this monograph. Examples of effective schools projects in which appropriate data played a central part in shaping effective implementation have been provided in Murphy and Waynant's (1989) description of a large suburban project; Benore's (1989) analysis of a multi-district project in Michigan; portrayals by the Southern Coalition for Educational Equity (1986) and by Groom (1989) of big city projects; Everson, Scollay, Fabert, and Garcia's (1986) description of a small suburban project; descriptions by Gauthier (1982), Shoemaker (1982, 1984), and their colleagues working at the state level in Connecticut, and Azumi's (1987) description of an elementary school project in Newark. The importance of data in implementing effective schools projects has been highlighted by Thomas Kelly (undated) of the Suffolk III BOCES Metro Effective Schools Consortium in New York as follows:

> Clear data make it possible for a diverse group of individuals to come to consensus. Schools are inherently complex organizations. Each staff is made up of individuals with different personal histories and backgrounds, values and beliefs. Progress occurs when everyone pulls in the same direction. Real positive and lasting change in an organization comes about on the basis of commitment, not authority. Clear data can enable a school to get such commitment to needed change. It can lead to consensus (Kelly, undated:1).

7. ***Effective schools projects must avoid reliance on bureaucratic implementation stressing forms and checklists as well as mandated components rigidly applied in participating schools and classrooms.*** Among the best established findings of research dealing with significant school improvement efforts are the conclusions that: scope must be allowed for adapting a proposed change in curriculum or instruction in the context of participating schools and classrooms; assistance should be provided through the efforts of informed individuals as contrasted with bureaucratic checklists and regulations; and identification and resolution of practical problems in implementation depend on participants' personal knowledge and understanding of complex realities more than impersonal control mechanisms that are convenient for high-level decision makers (e.g., Spence, Takei, and Sim, 1978; Fullan, 1982; Cox, French, and Loucks-Horsley, 1987; Henshaw, Wilson, and Morefield, 1987; Wimpelberg, 1987b; Guba and Lincoln, 1989). "Technoholic" approaches (Vaill, 1989) that attempt to impose improvement through comprehensive, linear programming and supervision are no more likely to work well in schools than in other types of organizations. Effective schools projects are no exception. Research on the correlates of effectiveness has identified program components to receive attention in preparing a potentially successful improvement plan, but has not produced a list of characteristics that can be improved mainly through supervisors' rating them as adequate or inadequate on an evaluation form (Lezotte, 1982a).

8. ***Effective schools projects should seek out and consider using materials, methods, and approaches that have been successful in schools and projects elsewhere.*** Improving school effectiveness is a difficult undertaking which faculties of a participating school or project cannot be expected to reinvent successfully entirely on their own initiative (Lezotte and Bancroft, 1985b; Lezotte and Taylor, 1989). As noted above, approaches developed elsewhere seldom if ever can be transported successfully without considerable adaptation, and "packaged" approaches for initiating change or improving instruction are dangerous from the point of view that they frequently are introduced as a substitute for the hard work and often considerable resources required to bring about significant improvement. Nevertheless, prospects for success in effective schools projects are greatly enhanced when participants judiciously consider and adapt appropriate approaches developed and successfully implemented in other locations (Lezotte and Bancroft, 1985b; Heim, Flowers, and Anderson, 1989). In the terminology used by Peters (1988), "creative swiping" should replace the "not invented here" syndrome.

Examples of approaches which should be considered for many or most projects include the following: use of TESA training early in a project to sensitize teachers and help develop their skills in reaching low achievers (Brookover, 1982; Olson, 1986; Sudlow, 1989); "effective teaching" approaches for systematizing the lesson delivery of teachers who may be weak in this area (Brookover, 1982; Sudlow, 1989); curriculum materials designed specifically to develop students' comprehension skills (Levine and Stark, 1982; Williams, 1987; Levine, 1988); approaches for involving parents and other community representatives (Comer, 1980, 1988; Henderson, Marburger, and Ooms, 1985; Murphy and Waynant, 1989; O'Neill and Shoemaker, 1989); instruments, such as the Degrees of Reading Power test, which are designed to help in planning and delivering instruction focussed on improvement in students' comprehension (Southern Coalition for Educational Equity, 1986; Levine, 1988; Levine and Sherk, 1990); assertive discipline or similar approaches (Sudlow, 1989); primary grades programs in San Diego and Los Angeles to develop language readiness among disadvantaged students (Stevens, 1988); and student-team learning arrangements that help engage students more actively in learning (Brookover, 1982, Slavin, 1987; Noddings, 1989; Slavin and Madden, 1989; Taylor, 1989). Additional approaches which have shown considerable utility when adapted in local projects are described in various chapters in a 1989 manuscript edited by Lezotte and Taylor.

We also should note that travel to other schools and districts is, in our experience, particularly valuable. Travel constitutes one of the most effective ways to encourage consideration of promising practices developed elsewhere and for allowing participants to make informed decisions concerning applicability to their own situation. Providing opportunities to visit other schools and districts has been critically important in helping participants in some effective schools projects develop readiness and capability for introducing significant improvements in their own schools (Lezotte and Taylor, 1989).

9. ***The success of an effective schools project depends on a judicious mixture of autonomy among participating faculties and a measure of directiveness from the central office, a kind of "directed autonomy."*** As we pointed our earlier, flexibility and independence in making decisions about the implementation of instruction and other aspects of education have been identified as correlates of effectiveness at both the school and classroom levels. On the other hand, except in the case of isolated maverick schools that have become effective largely on their own, success also requires considerable direction and support from central leadership (see below). This conclusion is compatible with those of researchers who have studied innovation in general and found that it is most likely to be successful when it combines elements of "bottom up" planning and decisionmaking with "top-down" stimuli and support in setting directions and guiding the change process (Huberman and Miles, 1982; Hackman and Walton, 1986; Achilles, 1987; Hall and Hord, 1987; McLaughlin, 1987; Dutweiler, 1988; Endo, 1988; Meyer, 1988; Pajak and Glickman, 1989). This type of directed autonomy has been described by organizational analyst Robert Waterman (1988) as involving central leadership in letting employees know that "persons at the operating level who know the most about day-to-day problems" can take action to solve them (Waterman, 1988:82). As Waterman further points out, directed or "guided" autonomy also can stimulate staff commitment by making jobs more meaningful and exciting (1988:92).

A. CENTRAL LEADERSHIP AND RESPONSIBILITIES

Specialists who have conducted effective schools projects and analysts who have examined their implementation have been virtually unanimous in observing that leadership and support from central decisionmakers and, in projects with state government participation, from state personnel are vital considerations in determining whether they will succeed or fail (e.g., Purkey and Smith, 1983; Clark, Lotto, and Astuto, 1984; Pecheone and Shoemaker, 1984; Menahem and Weisman, 1985; Lezotte and Taylor, 1989). Not surprisingly, this same conclusion frequently has been emphasized in research on change in general (e.g., Fullan, 1982; Hall and Hord, 1987; Fuhrman, Clune, and Elmore, 1988). The importance of central leadership was underlined as follows as part of Cox, French, and Loucks-Horsley's (1987) summary of major conclusions derivable from several decades of research on successful change in education:

> Principals...did not act alone, but in combination with district and other building staff...A combination of district/building pressure and support was critical...[in part because] for significant innovations to receive adequate attention they had to have the district's mandate, which...in effect, took pressure off principals....Leadership and support took many forms and came from many sources...The collaboration and support structures of successful change efforts are models for routine district/school operations, not a single recipe for who should do what (Cox, French, and Loucks-Horsley, 1987:23-24).

As regards effective schools projects, experience in Connecticut and elsewhere led Shoemaker (1986) to delineate the role of the district office in six major categories: *initiating*, including statement of mission and goals, introduction of a collaborative planning process, and public commitment from the superintendent of schools and the board of education; *planning*, including development of outcomes-based learning objectives to help "teachers and principals focus their energies on improved teaching and learning"; *conferring legitimacy*, including development of polices to "protect" practices involving systematic homework, rigorous student retention standards, expansion of academic learning time, and other activities involving correlates of effectiveness; *enhancing implementation*, including support for staff development, technical assistance in collecting and analyzing data, and provision of appropriate resources; *evaluating*, including assistance in communicating and using data to affect practice in participating schools; and *sustaining effort*, including a variety of actions to maintain motivation and continuity across the many years required for fundamental improvement in schools (Shoemaker, 1986: 5-6). Sudlow (1989) has pointed out that leadership dimensions such as those cited above are interdependent. For example, district initiative in developing systemwide learning objectives and criterion-referenced tests is not likely to succeed unless the district also makes a continuing effort to involve teachers in planning at both the system and school levels.

Elsewhere, Shoemaker and her colleagues (Pecheone and Shoemaker, 1984) have pointed out that central leadership is particularly important in ensuring continuity of committed leadership at the building level, which several researchers have identified as a key consideration in describing the demise of promising efforts at schools that received a new principal unwilling or unable to maintain initial momentum (e.g., Farrar, 1984). In our own experience, some effective schools projects have been either severely compromised or virtually destroyed in districts where central administrators maintained the facade and terminology associated with a project but diverted participants' attention to other topics temporarily spotlighted in the latest educational journals and magazines.

Research on district responsibilities in implementing effective schools projects or otherwise contributing to school effectiveness has been limited, but here, too, results confirm the central importance of district leadership and support. For example, Murphy and Hallinger (1986) and Peterson, Murphy, and Hallinger (1987) studied superintendents of twelve unusually effective school districts in California and concluded that they were "actively involved" and "influential" in developing both district and school goals, procedures for actually selecting staff (particularly new administrators), supervising and evaluating principals, establishing and regularly monitoring a "district wide instructional and curricular focus", and ensuring consistency in "technical core" operations such as functioning of categorically funded programs, use of standardized teacher evaluation procedures, and monitoring of curriculum and instruction. A recent study comparing San Diego County schools which had and had not made a "significant measure" of "equity gains" (i.e., more equitable achievement scores across all economic subgroups) was viewed by its authors as confirming and extending Murphy and Hallinger's findings in concluding that the districts in which equity schools are located emphasized "control of principal behavior and site level activity" through selection, supervision, evaluation, and training of principals as well as goal setting, resource allocation, and test analysis. Central office personnel in these districts focussed on "technological core" considerations involving curriculum, instruction, and staff development (Pollack, 1988: 29-31). External direction and support also were being provided by the county office of education, district consortia, the State Department of Education, and other agencies.

Recognizing the responsibilities of central leadership and based on their own experience on working to enhance school effectiveness on a district-wide basis, senior administrators of the Prince George's County Public Schools have delineated the "Characteristics of an Effective School System" that include the following : 1) strong instructionally focused leadership; 2) clear mission; 3) frequent monitoring of student progress; 4) high expectations for all students and staff; 5) "purposeful" involvement of parents and others; 6) curriculum and instruction that assure opportunities to learn for all students; 7) support to schools to assure a safe and orderly environment; 8) high attendance rate among students and staff; 9) strong staff development which "reflects and supports the implementation of the Effective Schools Program"; and 10) clear understanding by all staff of their roles and responsibilities along with an "evaluation process to support the Effective Schools Process." From six to eleven "implications for planning and action" are spelled out for each characteristic. For example, one implication of the first characteristic is that "Directors assure that resources within their departments and areas of responsibility provide assistance and support for school by school implementation of the Effective Schools Process," and one implication for the second characteristic is that "System policies and administrative procedures are re-reviewed on a regular basis, and strengthened or adjusted, as needed, to increase support for the system's mission and improvement goals" (Murphy and Waynant, 1989).

Acknowledging that successful school improvement projects generally require some "top down" initiative (see above) and that central decisionmakers also are responsible for providing many kinds of assistance at each step in the improvement process, one can view the central office role as typically involving some mixture of *decisive mandating of general directions combined with sufficient technical and financial assistance* (cf. Brickell, 1980) to allow for successful implementation of the mandate. Examples of productive action combining central mandates and provision of adequate assistance to schools participating in effective school projects include the following:

- specification of an instructional management system incorporating an aligned curriculum emphasizing higher order skills, combined with technical assistance regarding relevant testing and instructional strategies and with clerical assistance and computers to make record-keeping manageable for teachers.

- requirements that English teachers assign and grade written papers, together with funding (as provided in Florida) to limit their daily and weekly student load.

- setting of reading comprehension minimal scores to identify students requiring remedial help, combined with funding and technical assistance to provide appropriate compensatory services. Both Connecticut and New York State use the Degrees of Reading Power Test to implement this type of approach.

- preparation of district-level discipline codes emphasizing attainment of an orderly and safe environment, combined with provision of resources for in-school suspension rooms, "time-out" rooms, security guards, or other implementation components that may be required to ensure that the code is effective and equitable. A counterexample in which firm discipline was mandated but funding and other resources were not provided to allow for successful implementation is described in Brieschke (1987).

- introduction of a firm and specific promotions/retention policy (as has been evident at some unusually effective schools), combined with monetary resources and supervision to ensure that retained students are placed with outstanding teachers who provide responsive instruction and that additional afterschool, summer, and other special learning opportunities are provided for retainees. Without such resources and supervision, a firm promotions policy is likely to be at best punitive, and at worst a fraudulent attempt to raise test scores artificially with no substantial improvement in students' rate of learning.

- guidelines to encourage heterogeneous grouping, together with resources to provide relatively small classes so that teachers can deal effectively with heterogeneity.

As is apparent in the preceding examples, much of the responsibility of central leadership in implementing effective school projects revolves around provision and/or assurance of adequate resources to allow for successful implementation of mandated systemwide policies and practices (Stevens, 1988). "Mandating improvement without providing needed resources," as recently was concluded in an evaluation of school-based reform efforts in New York City, "only encourages staff cynicism and inaction" (Kelley and Willner, 1988:67). Central responsibility frequently centers on the need to make sure that changes are manageable for teachers with respect to considerations such as recordkeeping, enhanced school responsibilities in working with parents, class size and daily student load responsibilities, and time for staff development and individual and collaborative planning. Some excellent advice in this regard has been provided by Carnine (1988:86) as follows: "If money and time are lacking to support the innovation..., reduce its scope or abandon it altogether."

When central decisionmakers abdicate their responsibilities for providing meaningful assistance to implement their mandates, the result is likely to be an outcome variously described by informed observers with terminology such as "nonimplementation" (Brieschke, 1987), "illusory" implementation (Popkewitz, Tabachnick, and Wehlage, 1982; Williams, 1989), "cosmetic" reform (Orlich, 1989), "symbolic" implementation (Mann, 1989); and "phantom" implementation (Pogrow, 1983). Our own favorite term is "hallucinatory" implementation. We realize that such terms can be used to describe innumerable effective schools projects and other school improvement efforts, but we do not completely despair concerning the possibility that district, state, and other centralized mandates will less frequently neglect the assistance side of the "mandate with support" equation in the future.

B. PROMISING INTERVENTION PRACTICES

Practitioners and specialists who direct effective schools projects have explored and developed a variety of approaches for helping to ensure a successful outcome at participating schools. Approaches which appear to have significant potential in this regard include the following:

- establishment and facilitation of an informal group of participating principals who meet regularly and work together to provide overall guidance for the project. This approach has been used in the Milwaukee RISE project (McCormack-Larkin and Kritek, 1982) and, to a lesser degree, in the Kansas City, Missouri STEPS project (Groom, 1989).

- provision of parallel and coordinated training for administrators of participating schools (Everson, Scollay, Fabert, and Garcia, 1986; Heims, Flowers, and Anderson, 1989).
- district development and sponsorship of individual school audits focussing on effective schools correlates and implementation. This approach is being explored in the Prince George's County (Maryland) Public Schools and in the Kansas City STEPS project.
- state government operation of principals' academies which emphasize effective schools and/or instructional leadership research. Some encouraging information regarding the functioning of such academies has been reported for West Virginia (Pisapia and Currie, 1989) and California (Wells and Gendler, 1988).
- redesign and utilization of personnel evaluation instruments to emphasize effective schools correlates (Adams, Allen, and Fortenberry, 1989).
- assignment of new or weak principals for several weeks of observation and shadowing of more effective principals (O'Neill and Shoemaker, 1989; Snider, 1989).
- arrangements to ensure that faculty at poorly functioning schools can participate in an effective schools project. If subsequent improvement is not apparent, additional interventions include removal of their principals to participate in full-time training and increase in guidance and assistance form the central office. This approach has been used in Community District 13 in New York City.
- programs, as in Prince George's County, for training and selecting future administrators partly based on effective school research.
- use of a "central office intervention team, consisting of representatives from the basic skills, bilingual, staff development, and records and evaluation divisions", to confer with school improvement teams at ten of the lower achieving schools in a district-wide effective schools project involving elementary schools in Newark (Azumi, 1987:6).
- designation of and reimbursement for teacher leaders who function as a link between their school faculty, the central office, external resources, and project personnel (Pratte, 1989).
- assignment of former (i.e., retired) principals to serve as mentors for principals of schools engaged in site-based planning as part of an effective schools project (Johnson-Lewis, 1988).
- state department of education and university technical assistance for Missouri elementary schools participating in an Accelerated Schools project using approaches developed at Stanford University (Levin, 1987; Wells, 1989).
- functioning of teams, appointed and assisted by the New York State Department of Education, which provide program auditing and other technical assistance for individual schools, particularly those identified as below specific cutoff points on achievement tests (Freeborne, 1984; Office of Elementary, Secondary and Continuing Education, 1987). However, it appears that outcomes generally were not encouraging at overburdened big city schools participating in this project (Kelley and Willner, 1988).
- assignment of Mentor Teachers to comprise twenty percent of the faculty at inner city schools in an effective schools project (Stevens, 1988).

C. SCHOOL-SITE PLANNING AND DECISIONMAKING

As is true with respect to educational change in general, research and experience involving effective schools projects indicate that the building is the key unit in implementing innovations and that most of the multitude of decisions and actions to bring about significant improvement must be reached and carried out at this level (Lezotte and Bancroft, 1985a; 1985b; Marburger, 1985; Richardson, 1988). Before the 1980's, most unusually effective schools evolved from the dedicated but groping efforts of a principal or some other school leader or small group of leaders (see above). Beginning about 1980, efforts to create unusually effective schools on a planned basis proliferated rapidly throughout the United States. In most cases, such efforts have involved multi-school projects which appropriately recognized, at least to some extent, that participating buildings constitute the fundamental unit on which to focus activities to bring about improvement.

Since many effective schools advocates were unwilling to wait for a few unusually successful schools to emerge haphazardly from the unplanned efforts of an exceptional (and usually "maverick") principal, they were challenged to find other approaches for greatly enhancing effectiveness across a group of previously "normal" schools. Recognizing that one of the central achievements of unusually effective principals involved their success in somehow developing and maintaining faculty motivation to improve instruction, and aware that some research on change in schools and other organizations pointed toward employee participation in decisionmaking as a key variable in developing staff motivation and commitment (Purkey and Smith, 1983; Mace-Matluck, n.d.), effective schools advocates began to emphasize faculty involvement in the preparation and implementation of site-level improvement plans as a primary mechanism that could help large numbers of schools move toward greater effectiveness. Indeed, faculty participation in designing and carrying out school improvement plans frequently has been an important aspect of successful effective schools projects such as those cited in preceding sections of this monograph.

At the same time, public education as a whole has entered a period of change and experimentation in which there is widespread and growing recognition that arrangements for schooling may benefit from a major overhaul based in part on increased teacher participation in site-level planning and implementation of fundamental reforms. Proposals for and experimentation with such reforms vary widely from relatively modest arrangements at one end of a continuum at which teachers are involved in planning somewhat marginal changes to radical efforts which give teachers sole or primary responsibility for redesigning almost everything in their schools. We cannot, in this monograph, provide a comprehensive analysis of such proposals and experiments, some of which are discussed at length in other sources such as Clune and White (1988), Conley, Schmidle, and Shedd (1988), Maeroff (1988), White (1988), and Conley, (1989), but since issues posed by this national trend toward greater teacher participation are also priority concerns in the effective schools movement, we will briefly discuss several such issues which have particular salience for effective schools projects.

1. ***What respective roles should be assigned to the principal and teachers, and what kinds of resources are necessary to help them succeed?*** As pointed out above, unusually effective schools generally evolved historically from the efforts of an exceptional principal who exercised and/or seized a predominant role in the change process, and instructional leadership of the principal is known to be a predominant consideration in improving schools. However, educational reformers recognize that there are few and may never be many principals this exceptional, that some exceptional principals may be floundering in schools with recalcitrant faculty, and also that many less than exceptional principals might be much more effective if more teachers were more fully committed to fundamental changes. Accordingly, there is much support for proposals to "empower" teachers in order to make then equal or even predominant actors in reforming the schools.

Unfortunately, there has been little research to help identify the roles that should be assigned respectively to principals and teachers and the ways they should function in carrying out school effectiveness projects or other instructional improvement efforts (Conley, Schmidle, and Shedd, 1988; Dutweiler, 1988; Conley, 1989). Most effective schools projects have utilized some kind of decision making committee or cabinet including the principal and elected or appointed teacher representatives (Henderson and Lezotte, 1988). Frequently, parents or representatives of the community and/or external organizations also are included, as are students at secondary schools. We believe that such committees are useful and in some cases perhaps even indispensable components in formulating and carrying out an improvement plan (for research supporting this conclusion, see Kopple, 1985), but beyond this conclusion we do not believe it is possible at this time to specify how large the planning group should be, how it should operate, or whether or how it should try to involve the entire faculty in regular votes, membership on subcommittees, or other ways. We also believe it is not now possible to formulate specific guidelines for dividing or distributing decisionmaking authority between or across administrators and teachers. Most likely, optimal guidelines to answer such questions will vary a great deal from district to district in accordance with the people involved and their recent experience and working environments.

Several other kinds of conclusions, are, however, eminently defensible. First, there is a real dilemma in moving to provide teachers with more decisionmaking authority at the same time that research clearly underlines the importance of administrative action and initiative in improving school effectiveness (Leiberman, 1988; Conley, 1989). This dilemma cannot be resolved successfully largely on the basis of flip ideological claims to the effect that empowering teachers will somehow transform them into members of a cohesive faculty committed in practice to the extremely difficult work of reforming schools. Although decisionmaking in organizations is not a zero-sum game in which greater participation necessarily reduces the power of administrators (Tannenbaun, 1968; Pecheone and Shoemaker, 1984), simplistic movement toward teacher empowerment will not in itself do much to improve school effectiveness (Conley, 1989; also see Wagner and Gooding, 1987, for somewhat discouraging data on the general effects of shared influence and decisionmaking).

Our second conclusion, closely related to the first, is that from some points of view many actions required to make schools more effective may run counter to teachers' desires and/or self-perceived interests. For example, substantial improvement is likely to require additional time and effort outside the current working day, acquisition of new instructional techniques will be a painful task for many teachers, and, as we have pointed out in several sections of this monograph, delivery of active and enriched learning focussed on higher order skills necessitates a reduced emphasis on skills that are most easily taught. We agree that this argument can and should be turned around in pointing out that it is precisely the "hardships" of change that may make participation a prerequisite for gaining teachers' commitment to it, but the potentially counterproductive effects of teachers' perceived self-interest also suggest caution in moving toward radical increase in participation and empowerment. This is particularly the case inasmuch as recent research on a school effectiveness project in Maryland found no relationship between extent of teacher participation in program activities and movement toward greater effectiveness on "challenge" correlates selected by participants at each school (Buttram and Kruse, 1988).

Third, success of efforts to involve faculty in decisionmaking as part of effective schools projects or other thrusts will depend on provision of appropriate and substantial training and related technical assistance for both teachers and administrators (Schmuck and Runkel, 1985; Collins, 1988; Duttweiler, 1988; Harrison, Killion, and Mitchell, 1989; Strusinski, 1989). The importance of training was emphasized as follows in a recent study of developments in a snowball sample of 31 school districts attempting to initiate one or another approach to school based management (SBM):

> Increased training is an obvious response to the difficulty of the roles involved in SBM, and lack of training did surface as a problem . . . In schools or districts where very little training was provided, participants complained that they had been given inadequate orientation to the program (Clune and White, 1988:28-29).

One approach for providing training and related technical assistance for faculty engaged in planning for improved effectiveness has been described by Everson, Scollay, Fabert, and Garcia (1986), who portrayed the implementation of a planning process developed and implemented successfully by the Mid-continent Regional Educational Laboratory (McREL). The McREL approach involves the establishment of a school leadership team with no more than nine members. Initially, four full-day workshops for team members are spaced four-to-six days apart, and participating administrators additionally attend four half-day sessions. Much of the activity in these workshops involves analysis of data collected on student, teacher, and administrator performance at participating schools.

A fourth and closely related conclusion regarding the functioning of site planning committees or councils involves the necessity to provide their members with substantial amounts of time to develop and monitor both their planning procedures and their action plans for change (Duttweiler, 1988; Henderson and Lezotte, 1988; David, 1989; Mauriel and Lindquist, 1989; Saxl, Kaplan, Robinson, and Springer, 1989). As pointed out by Clune and White (1988), planning can be a "very time-consuming process" for principals and teachers who are "already burdened with time-consuming activities" and experience difficulty in devising and pursuing "ideas which go against state laws or district policy" (Clune and White, 1988:28). Absence of time allocated for participation can lead to what Firestone and Corbett (1988) have called "mock" participation.

Fifth, a discretionary fund should be available so that planning committees and, indeed, entire faculties participating in school effectiveness projects can acquire early experience in aligning and realigning resources and educational goals, and can move quickly to initiate significant changes in instructional programming (David, 1989). The importance and utility of a significant discretionary fund have been stressed in a recent evaluation of efforts to enhance site-based planning in New York City (Kelley and Willner, 1988). Beyond provision of a discretionary fund, some school-based management projects are experimenting with possibilities for allowing faculties to systematically overhaul their budgets with little or no restraint imposed by state or district policies or teacher and administrator contractual limitations (David, 1989). It is too early to determine whether or how often and in what circumstances this approach is likely to succeed.

2. ***How much autonomy should be provided to faculties participating in an effective schools project?*** We realize that from some points of view this is a nonsensical question inasmuch as there are competing considerations which inevitably will suggest the desirability of movement toward more or less autonomy as circumstances change and as differing aspects of education are analyzed and modified. On the one hand research (much of which is cited elsewhere in this monograph) indicates that effectiveness depends on the provision or acquisition of wide latitude in implementing curriculum and instruction at the classroom and school levels (also see Floden, 1987). On the other hand, districts must ensure that there are some commonalities in organizing and delivering educational services across schools if priority needs and problems are to be addressed in a systematic and equitable manner, and research on school effectiveness further emphasizes the importance of district leadership in setting priorities and directions for successful change (see above). What, then, can one conclude concerning issues involving the appropriate amount and level of autonomy for schools participating in effective schools projects?

First, as pointed out in the preceding section, substantial amounts of staff development time and related planning resources and technical assistance are necessary if faculties are to learn to function successfully in a more autonomous manner. In this regard, Floden (1987) and his colleagues concluded their five state study of mathematics content policies with the observation that few school districts have "the inservice education budgets and capacities required for giving substantive preparation for teacher autonomy" (Floden, 1987:32).

Second, as we also pointed out above, movement toward the "full autonomy" pole is a recent development associated with radical "school-based management" and "teacher empowerment" approaches which give faculty nearly total control over budget, curriculum, and personnel appointments. Little is known concerning the potential utility or practical implementation of such approaches (Mauriel and Lindquist, 1989). On the other hand, many schools have greatly improved in effectiveness based on the leadership of teams or committees which have much less autonomy, provided that important considerations such as leadership training, staff development time, and reform of instructional arrangements have been adequately addressed. Therefore, we conclude that one should be cautious about moving too quickly or simplistically toward the full autonomy pole unless or until more is known about how to do so successfully.

Third, there may be particularly good reasons for giving the principal and/or faculty at schools in effectiveness enhancement projects significant control over appointment of new staff and release of current staff. As we saw earlier, vigorous action in selecting new teachers and removing or transferring out current staff frequently is a distinguishing characteristic of unusually effective schools. Such activity may, in turn, often be prerequisite and/or a key contributor to success in ensuring a clear school mission shared by faculty who work together to improve other correlates of effectiveness. On the other hand, vigor in hiring and releasing staff frequently may mostly reflect the personalities and inclinations of unusually effective principals, rather than constituting a necessary prerequisite for success in and of itself. In addition, merely changing the composition of faculty in the absence of appropriate changes dealing with instructional arrangements, practice-oriented staff development, and other correlates probably will not produce significant gains in effectiveness.

Fourth, one of the most promising aspects of recent efforts to encourage and facilitate school and teacher empowerment involves the granting of waivers which allow a school to overcome real or imagined restrictions imposed by federal, state, and local district regulations and policies, and/or by contracts negotiated by school boards and teacher organizations. Thus Collins (1988) has reported that fourteen schools in the Dade County Public Schools empowerment project have received permission to waive specified regulations or policies as part of larger, site-level planning efforts designed to improve their educational programs. Utilization of waivers ultimately may be most productive as part of a system of "conditional deregulation" wherein ineffective schools receive technical assistance and other resources as well as greater flexibility in working to meet specified improvement targets negotiated with central decisionmakers, but schools which still are ineffective after several years then may be "reconstituted" in terms of leadership and faculty (Mann, 1989). Development of waiver policies may well play an important part in implementing effective schools projects in the future.

However, development of policies to waive unproductive regulation or introduce other teacher empowerment or school-based management approaches should not be confused with the effective schools movement or other research-based efforts to bring about systematic improvement in elementary and secondary schools (Harrison, Killion, and Mitchell, 1989). For one thing, a well designed effective schools project should have a high likelihood of success because it would reflect two decades of useful research, whereas teacher empowerment and school-based management approaches are still in their infancy and little is known concerning their potential for improving instruction or how they should be implemented in practice. In addition, some research on school-based management suggests that its underlying purpose frequently may be aimed at stabilizing political conflict in school districts and developing their "symbolic legitimacy", rather than with changing authority relations or fundamentally improving institutional functioning (Ogawa and Malen, 1989). Years of experimentation and research probably will be required before school-based management approaches stressing waivers or other alternatives for empowering faculty can be expected to bring about substantial improvement in instruction and achievement on a widespread and reliable basis.

In our view, public schools in the United States should not forsake the strong possibilities for improvement that can be gained through effective schools approaches, in order to pursue uncertain and perhaps ultimately unattainable goals associated with recent experiments in empowerment and self-governance. Promising possibilities in the latter direction should continue to be pursued, but such possibilities should not be treated as a substitute for systematic programs to improve elementary and secondary schools through the application of knowledge gained during several decades of research and practice dealing with unusually effective schools.

D. ASSESSMENT OF SCHOOL PROBLEMS AND EFFECTIVENESS

An earlier section of this monograph considered issues involving assessment of instruction in unusually effective schools and in projects to improve school effectiveness. Our concern in this section is with larger questions involving assessment of school effectiveness in general and utilization of instruments to assist faculties in moving to improve their schools with respect to a variety of effectiveness correlates.

A large number of available instruments may be of some help in providing a common language to discuss possibilities for change (Henderson and Lezotte, 1988) and in determining how well a school is functioning, what problems and problem areas should be addressed to improve school functioning, and whether progress is being made toward greater effectiveness. Many of these instruments were developed based on knowledge of organizational development in general (see Schmuck and Runkel, 1985); others were developed specifically for use in projects aimed at improving education based on the characteristics of unusually effective schools.

We cannot in this monograph provide a full review of all the various instruments and approaches for assessing school problems and developments. Fortunately, several scholars have prepared relatively comprehensive reviews of this kind. In particular, Denise Gotfredson (1986) and her colleagues reviewed 27 assessment instruments that have been used to help guide intervention efforts in 39 school improvement projects. After acknowledging that little agreement exists concerning what dimensions should be assessed and the standards to apply in interpreting data, these reviewers reported that most of the instruments attempted to assess a variety of effectiveness correlates such as clear goals, high expectations, order and discipline, collaborative planning, frequent monitoring, and parental involvement. Their overall conclusions included the identification as follows of instruments that "appear to have most promise for yielding reliable and valid measures" of important school characteristics:

> For assessments relying upon teachers and other adult school staff, the Connecticut State Department of Education School Effectiveness Questionnaire and Interview are inexpensive tools tailored specifically to the effective schools lists. For schools wishing to assess a broader range of school characteristics these instruments might be augmented with the Organizational Health Description Questionnaire (OHDQ), School Assessment Survey (SAS), Climate Effectiveness Inventory (CEI), and the Effective School Battery (ESB), depending upon the content desired. The OHDQ [available from the San Diego County Office of Education] and SAS [available from Research for Better Schools, Inc.] are especially useful for diagnosing organizational structure and process, the CEI [available from the Research and Service Institute] for discipline related constructs, and the ESB [available from Psychological Assessment Resources, Inc.] for both organizational health and discipline (Gottfredson, Hybl, Gottfredson, and Castaneda, 1986: 18-19).

In addition to the work of Gottfredson and her colleagues, sources that provide descriptive and evaluative information on a range of instruments include Anderson (1985, 1987), Kyle (1985), Mace-Matluck (1986), Arter (1987), Fleming and Buckles (1987), and Brousseau (1989). Brousseau also has provided a reliable questionnaire that draws on and reorganizes items from other instruments. Readers also should be aware that a team of researchers in Kentucky (Miller, Efthim, Koppel, and Sayre, 1985; Ruscoe, Yelton, and Miller, 1988) has been developing an assessment instrument which may prove particularly valuable for effective schools projects because it incorporates a multitude of items dealing with instruction-related issues, along with sections on climate, discipline, leadership, expectations, and other correlates.

Similarly, researchers in South Carolina have developed a reliable instrument that assesses teacher, student, and parent perceptions of instructional leadership, academic emphasis, high expectations, positive school climate, frequent monitoring, and home-school relations (Segars and Gottesman, 1989). Staff at the Mid-continent Regional Educational Laboratory also have developed instruments which respectively assess teacher and administrative perceptions of a school on nine correlates (the Describing Your School Characteristics Questionnaire) and time usage in a building (the Academic Efficiency Index), and have been used successfully to shape implementation of effective schools projects (Everson, Scollay, Fabert, and Garcia, 1986).

Thomas Kelly and his colleagues participating in the New York State Effective Schools Consortium at BOCES III in Suffolk, New York also have recently developed an effective schools questionnaire (the Survey of Professional Staff Perceptions of School Program) which has outstanding reliability at both the elementary and the secondary levels across eleven effective schools "characteristics" or dimensions identified as follows: "positive school climate", "planning process", "academic goals/high expectations", "clearly defined curricula", "monitor student progress", "teacher effectiveness", "administrative leadership", "parent involvement", "student responsibility", "rewards and incentives", and "order and discipline" (Kelly and Rooney, 1987). Most of the dimensions are highly intercorrelated, but the parent involvement and student responsibility subscales and, to a lesser extent, the rewards and order subscales are less strongly correlated with others. Many of the 131 individual items appear to be particularly useful for initiating analysis and discussion of possibilities for improving school-level functioning. In addition, Kelly and his colleagues have developed a companion 130 item "Survey of Professional Staff Perceptions of Instructional Program" which includes sections dealing with reading, math, writing, social studies, and science, and related survey instruments to assess parent and student perception of school programs.

Experience in Connecticut and elsewhere indicates that initial assessment of conditions in a school participating in an improvement project, along with related efforts of an assessment facilitator, can play an important part in determining whether the school will be successful in becoming more effective (Gauthier, Pecheone, and Shoemaker, 1985). Thus an evaluation of the Connecticut project indicated that assessment information obtained from teachers and administrators frequently stimulated participants to address school problems more openly and honestly, but the state facilitator also played a critical part in "building trust among the team members so that they could begin to work on school issues" and in "helping the team to develop their own action plan for reentry into the school, presentation of the data and priorities to the school staff, . . . and/for helping the team begin to implement the project" (Pecheone and Shoemaker, 1984:27). Staff of the Mid-continent Regional Educational Laboratory also report that a skilled facilitator frequently is essential in helping participants in effective schools projects make productive use of data collected through administration of effectiveness assessment instruments (Susan Everson, personal communications, November 10, 1988).

One reason why a facilitator is so important is because data produced by assessment instruments do not automatically or easily identify severe problems or opportunities to improve effectiveness. For one thing, even the best available questionnaires frequently elicit mostly positive responses from respondents, even in schools with serious deficiencies regarding expectations, academic press, and other correlates. In addition, questionnaire components assessing dimensions such as leadership and parent relations include a variety of items dealing with a range of topics that are difficult to analyze and interpret (Gottfredson, Hybl, Gottfredson, and Casteneda, 1986; Brousseau, 1989).

Recognizing the shortcomings inherent in questionnaires, staff of the Connecticut School Effectiveness Project developed an interview schedule to assist in identifying problems and possibilities for change at the school building level. Initial analysis of data collected using the Connecticut School Effectiveness Interview indicated that it yields conclusions substantially different from the State Department's companion questionnaire (Villanova, 1984), particularly with regard to clear school mission, high expectations, opportunity to learn, and monitoring of student progress. Planning teams and facilitators functioning without the interview data thus are likely to be seriously handicapped.

Specialists who have directed or helped conduct effective schools projects report that information profiling a school's standing on expectations, leadership, use of time, and other correlates frequently forces or stimulates participants to confront the conclusion that improvements are both needed and possible (Farrar, 1984; Pecheone and Shoemaker, 1984; Everson, Scollay, Fabert, and Garcia, 1986; Kelly, 1989). When skilled facilitators are available for significant blocks of time to help school leadership teams and faculty committees interpret these data and develop their capacity to work together in planning improvements, information from questionnaires and interviews thus can be a powerful force in bringing about productive change. Data of the kind collected through effective schools assessment instruments frequently may assist in "breaking up" existing agreements and arrangements in the many schools at which, according to Fraatz (1988) and Shannon (1988), faculty generally value comfort with and accommodation to a superficially efficient and rational system above unsettling adjustments that would be required to improve the performance of low achievers.

E. THE STAFF DEVELOPMENT AND SCHOOL IMPROVEMENT PROCESS

Other sections of this monograph highlight the importance of practice-oriented, school-site staff development in providing equitable education using effective schools criteria. Guidelines for initiating and carrying on staff development to increase school effectiveness are identical to those which have been identified as desirable or necessary for any significant school improvement effort in general. As recently summarized by Fleming and Buckles (1987:4), some of the considerations that must be attended to include the following: "identification of consultants and trainers; provision of substitutes or teacher stipends; purchase of materials; availability of meeting space and planning time; [and] availability of travel/meeting expenses." As regards the focus of the staff development process, these authors further concluded that:

> Initial training should be just that: an introduction to the key features, approaches, and materials required . . . [Later activities should] provide opportunities to discuss the plan and how to incorporate activities into daily teaching . . . [and] time for teachers and administrators to reflect on desired practices and their impact on student performance. Programs that include classroom demonstrations, peer observation and feedback sessions and other opportunities for personal reflection have more lasting impact than a flurry of initial activity with no follow-up (Fleming and Buckles, 1987:4).

Suggestions for assisting schools engaged in staff development designed to enhance instructional effectiveness also have been provided by members of the Maine School Improvement Assistance Team sponsored by the state department of education. As summarized by Arbuckle (1986), these suggestions are as follows:

- Be patient.
- Provide staff with carefully selected reading material on relevant research before training or problem solving sessions.
- Space training or problem solving sessions over time, with enough time between to apply information.
- Carefully consider what it is you want to find out before starting to assess your school. Be sure to select data gathering instruments and sources that are most likely to yield appropriate and useful information . . . [do not] grab onto the first 'neat' assessment instrument . . .
- Examine the strengths of your school as well as areas of need. Don't overdo a focus on negatives.
- Remember that assessment is only one step in the improvement process. Don't get stuck on it.
- Take time to be sure you collectively understand the problem or situation you are examining and define it clearly before attempting to generate solutions to resolve it.
- Identify a range of alternative solutions and carefully select those which best match your situation. Don't grab on to the first one.
- Use research on effective staff development practices as a guide in planning improvement activities. Be sure to model these practices.
- Recognize that building needs differ and capitalize on their diversity. Don't push for consistency if there isn't any.
- Think creatively! Don't let the 'yes buts' get in your way.
- Define and formalize collaborative mechanisms within schools to plan and manage continuing improvement activities (Arbuckle, 1986: 4,5).

Planning Components and Emphases. As described and discussed elsewhere in this monograph, effective schools projects typically involve the establishment of building-level planning committees and, frequently, subcommittees which prepare annual or longer range improvement plans that deal, in one way or another, with various correlates of effectiveness. Many of the correlates we discussed in the preceding pages, such as site-level staff development, provision of substantial technical assistance, and orientation toward practical problem solving, have clear implications concerning the preparation and implementation of effectiveness improvement plans. Beyond such rather obvious implications, which we will not belabor here, little is known about how to shape and carry out the planning process. However, a few comments may be helpful regarding experiences reported by persons who have participated in effective schools improvement projects.

1. In line with experience cited above regarding the need to deal with fundamental instructional issues rather than largely limiting attention to orderly school environment, parent involvement, or other planning components which may have relatively little direct impact in the classroom, some educators have concluded that improvement plans should focus explicitly on instruction. For example, school officials in Prince George's County (Murphy and Waynant, 1989) originally required that school-level planners address each major correlate in preparing annual improvement plans, but subsequent experience led to a shift in planning guidelines which now stress improvement in academic achievement. Somewhat similarly, Levine and Leibert (1987) summarized their experience with school-level improvement plans in arguing that planners should specifically address instructional issues such as grouping, pacing, delivery of compensatory education, and strategies for teaching higher order skills.

2. As indicated in several other parts of this monograph, planning in effective schools projects should be "data-driven" in the sense that analysis and decisions should take account of data on key indicators such as the extent to which disadvantaged students attain satisfactory performance on central learning objectives. Experience in many successful improvement projects indicates that appropriate data provide a critically important resource in encouraging and re-directing faculty toward meaningful change in existing practices (Henderson and Lezotte, 1988). As pointed out by Fraatz (1988), much of the evaluation activity that takes place in schools can be viewed more as a bureaucratic "politics of efficiency" designed to enhance organizational maintenance than a "warrant for intervention" to bring about fundamental improvements in effectiveness and equity (1988:45-6). Similarly, Shujaa and Richards (1989) have made a distinction between "organizational learning cultures" (OLC's) at schools which view test data as "symbolic" opportunities to alleviate or prevent public criticism, and OLC's at schools which treat testing as a "strategic" opportunity to identify and address real problems.

Examples of data which have been helpful in modifying attitudes and behavior in order to focus on strategic equity and effectiveness goals include: TESA peer observations in which teachers assess each others' interactions with low achievers; curriculum alignment activities in which faculties analyze a variety of data in collaborating to select specific skills to emphasize and de-emphasize at and across grade levels (Levine and Stark, 1981, 1982; Neidermeyer and Yelon, 1981; Wick and Turnbaugh, 1983); analysis of Degrees of Reading Power data which in effect force teachers to consider possibilities for change when their text and other materials are mismatched with their students' current comprehension levels (Harris and Cooper, 1985; Levine and Eubanks, 1989; Levine and Sherk, 1990); and information on student and faculty "time-on-task" which school improvement specialists help faculty collect and analyze as part of their participation in effective schools projects (Everson, Scollay, Fabert, and Garcia, 1986).

3. Once faculties have been directed to focus school improvement plans at least in part on instruction and have received assistance in collecting and analyzing pertinent data, they should be required and assisted (as usual the two go together) to be as specific as possible in reaching decisions about interventions to improve learning. An excellent example of productive specificity in an instructional improvement plan is provided in the following quotations from the annual progress report and subsequent improvement plan prepared at an elementary school in the Prince George's County Public Schools. After reaffirming the goal of continuing improvement in "pacing of the established reading program" and recognizing that several grades had relatively low reading comprehension scores, the School Planning and Management Team (SPMT) discussed recent progress and next steps as follows:

> The SPMT further analyzed data to determine what factors prevented Grades 2 and 6 from achieving the goal of improved pacing. The analysis showed that at Grade 6, nine students who should have moved to *Banners* from *Gateways* had not achieved a year's progress in a year's time. At Grade 2, twelve students who should have finished *Cloverleaf* and moved into *Sunburst*, had not achieved a year's progress in a year's time.
>
> The SPMT felt the all-day Kindergarten program and an emphasis on reading pacing had contributed to the significant growth at Grade 1. Grade 4 had placed a strong emphasis on pacing, pre-testing, and the use of graphic organizers. Demonstrations lessons had been presented at this level also.
>
> The SPMT discussed several suggestions for continual improvement, especially at the grade levels where progress was not shown. They include more frequent pacing meetings with the principal and reading teacher, more frequent reading inservice meetings on classroom instructional strategies that emphasize comprehension, and more frequent re-grouping on and across grade levels. In addition, several classes will be utilizing cooperative learning strategies in the Fall. The SPMT will meet twice during the summer and will continue its analysis as we develop our 1988-89 improvement plan.
>
> The SPMT reported to the Staff that over 3000 books were read during our Reading Incentive Program. A parent inservice on reading brought several hundred participants including 104 parents to the workshop. A plan for taking basals home was also developed this year. . . .
>
> The SPMT noted the continued decline this year in Grades 3 and 5 on the California Achievement Test. This will continue to be addressed through pacing meetings, pre-testing on magazines, the use of graphic organizers, demonstration lessons on comprehension strategies, continued close monitoring of reading program by the principal, and inservice activities for total staff.
>
> The SPMT noted more teachers integrating ILA strategies into their program but a need for still more involvement in the reading/writing connection . . .
>
> ***Weekly Progress Reports***
>
> The SPMT modified this objective during the year due to the incredible paperwork for teachers. Discussion and dialogue will continue next year as to how to make these progress reports more expedient to teachers. The program of sending Weekly Reports home was extremely successful and noted by the Visitation Team from the U.S. Department of Education as an excellent means of communication. Modification, however, may be necessary—possibly to a bi-weekly report. . . .
>
> ***Nightly Homework***
>
> The SPMT noted this was uniformly upheld. Due to lack of funding, however, the school could not afford composition books to go home for daily parent approval of assignments. Announcements were made via the P.A. system for 100% homework compliance by entire classes. . . .
>
> **[For the Following Year]**
>
> ***Activities/Timeline/Responsible Persons***
>
> - Classroom teachers will plan and meet with the Prin-

cipal, Reading Specialist, and other Instructional Staff to have each student in middle and top groups make a year's progress in a year's time in the basal text.

- Assessments will be made by classroom teachers, Principal, Reading Specialist and other Instructional Staff, *at the conclusion of each grading period*, to adjust instruction groups, and pacing.
- A needs assessment, in the form of a pre-test, will be given to each youngster in Grades 4-6 *before beginning a magazine.*
- Teachers will predict where they expect to be at the end of each grading period, will meet with the Principal and Reading Specialist, and will adjust their pacing and instructing accordingly.
- In-services will be conducted throughout the year *(monthly)* in the area of pacing and reading comprehension.
- Classroom teachers will continue to use ILA methods to incorporate writing into Reading/Language Arts program. Classroom teachers will develop and display two formal writing samples in the hallways *per grading period.*
- Parent in-services/workshops will take place to assist parents with reading skill development at home.
- Continue reading incentive program.
- Reading comprehension teaching strategies will be refined to show improvement in the reading comprehension skills of students as measured by the CAT and CRT scores.

4. A clear signal indicating that a school is concerned largely with "organizational maintenance" and the "politics of efficiency" (Fraatz, 1988) rather than fundamental improvement frequently is present when its plan specifies that most or all teachers or grades will participate to the same extent in the same intervention and/or will receive exactly the same resources. Since imperatives for improvement and needs for increased resources almost always vary from teacher to teacher and grade to grade, equivalence in interventions or parity in resources throughout a school usually mean that faculty have seized on simplistic solutions that require minimal change in instruction. For example, plans we have seen that represented mostly an "easy way out" with little or no modification of ineffective practice include the following:

- components specifying that every teacher receive exactly the same funding for supplementary materials.
- "Schoolwide" plans which redirected Chapter 1 resources to bring about a slight reduction in the size of every elementary class, with no fundamental intervention in arrangements for delivering instruction.
- provision of the same fraction of a (fragmented) paraprofessional's time for every classroom teacher.
- provision of a few minutes a week of obviously meaningless time in a computer lab for every student in a given grade or subject.
- purchase of a computer lab without a teacher or aide to maintain it, or with too few computers to allow for effective utilization.
- central office refusal to support or fund a proposed change or innovation on the grounds that every other school or teacher will want to try it.
- purchase of truckloads of consumable workbooks and ditto sheets that keep students occupied in seatwork.

5. Despite our insistence that school plans should deal explicitly with fundamental instructional issues, we also believe that initial school plans should include components dealing with relatively easy-to-address matters of clear concern to faculty, parents and students. Some of the obstacles to improvement in most schools can be partly overcome relatively rapidly and easily through expenditures of small amounts of money and time. For example, problems involving exterior or interior graffiti, delays in delivery of instructional materials, and lack of maintenance of audiovisual equipment frequently (but far from universally) can be alleviated or eliminated with relatively little trouble or trauma. Decisively acting to reduce relatively manageable problems can greatly enhance the credibility and consequent chances for success of leaders in a significant effective schools project. (Benore, 1989; Sudlow, 1989).

6. If they are to make much difference, school improvement plans generally will involve changes that some or many faculty will find distasteful, frequently because the modifications required will upset customary arrangements or interfere with faculty "rights" and privileges. A few examples that occur with some frequency include the following:

- regrouping arrangements which reduce senior faculty privileges in deciding which students they will teach.

- introduction of tutoring for low achievers before and after school, even though this may require teachers to work beyond their contractual obligations.

- agreement within a department, grade, or entire school to follow common testing practices, homework policies, and/or discipline rules, even though some or many faculty are satisfied with current idiosyncratic practices.

- reassignment of rooms, which may require senior teachers to forego space they have worked hard to customize and improve.

Willingness of faculty in an effective schools project to join together in planning and implementing changes which involve discomfort or loss of privileges is precisely the core manifestation of the effective schools correlate involving faculty commitment to a common, clear school mission. In the absence of such willingness, expressed support for other correlates such as high expectations for all students and focus on mastery of central learning objectives should not be expected to translate into achievement gains among students.

7. Persons responsible for the success of a school improvement committee or council should anticipate that the group will have to deal with and move beyond predictable stages in the development and implementation of a plan for change. In particular, most planning groups require initial assistance with respect to group process skills and procedures for analyzing data and developing plans (Sudlow, 1989). Differing skills and understandings and, in many cases, differing sources of external assistance will be required to help participants succeed in carrying out tasks that are most central at each stage. In addition, an explicit effort may be needed to counteract obstacles posed by "troublemakers" with personality problems that lead them to obstruct the group's functioning (Killmann, 1989).

One useful formulation of the major overlapping stages generally encountered in developing a meaningful improvement plan has been provided by the Effective Schools Unit (1987) of the New York State Department of Education as follows:

> ***Preparation Stage:*** concerned with membership, roles, functions and expectations.
>
> ***Start-Up Stage:*** concerned with establishing trust, workable procedures, time commitments.
>
> ***Group Problem Solving and Process Analysis Stage:*** concerned with how to handle disagreements, do data analysis, identify strengths and concerns.
>
> ***Action-Planning Stage:*** concerned with priorities, funding, resources, activities, and communication with faculty.
>
> ***Implementation and Evaluation Stage:*** concerned with school improvement plan, sustaining and documenting change, revising the plan and monitoring the effectiveness of the team.

8. Based on experience in numerous effective schools projects and other systematic instructional improvement efforts, we believe that it is critically important to understand that such intervention involves an ongoing *process*, not just an *event* or a *product* that a school or district is doing as this year's or next year's manifestation of whatever topic is faddish in educational journals (Carnine, 1988; Buffone and Ciccoretti, 1989; Eiseman, Fleming, and Hergert, 1989). A systematic approach which initiates the first stages of a long-range effective schools project should begin with a clear delineation of steps such as the following (quoted from Henderson and Lezotte, 1988:5):

> Once the [planning] team is established and trained to do its job, we recommend the following steps:
>
> 1. Establish subcommittees. Give each one a correlate from the effective schools research, such as strong instructional leadership or frequent monitoring of student progress.
>
> 2. Write a mission statement. Bring all values, beliefs, and opinions to the table. The purpose of this exercise is to determine where we are, where we want to be, and how to reduce the discrepancy between them. Without clarity about this, the group cannot proceed.
>
> 3. Conduct a needs assessment. Then compare it with your mission statement.
>
> - Use "disaggregated data", that is, data that reports results by race, sex and socioeconomic status. A school may, for example, average in the 60th percentile on reading achievement. But that figure does not tell you whether Blacks are doing as well as Whites, or whether the performance of the middle class and disadvantaged students increases or decreases as they get older.
> - Look at strengths and weaknesses, and at the presence or absence of the effective school correlates. What needs work?
> - Examine other information in the school's archives, such as dropout rate, school lunch participation, grade retention, disciplinary actions, etc.
>
> 4. Select improvement goals. Pick no more than three. Then develop an action plan with a three year time frame for each one.

F. ORGANIZATIONAL CULTURE ASPECTS AND ISSUES

While there are innumerable definitions of "organizational culture", most authors who analyze this concept stress that it has to do with the "way we do things around here"; i.e., the beliefs and norms members of an organization tend to share concerning what they should or should not, can or cannot do in performing their roles (Deal, 1985; Schmuck and Runkel, 1985; Furtwengler, 1988; Corbett and Rossman, 1989). Most authors also stress more specific aspects of organizational culture such as whether participants are relatively likely to resist or welcome innovations (Corbett, Firestone, and Rossman, 1987; Peterson, 1988), are passive in the face of obstacles rather than exemplify a problem solving, "take care of business" orientation (Heckman, 1987), and stress intellectual as compared with other goals in providing education (Furtwengler, 1985). Aspects of organizational culture that characterize the faculty in a given school obviously are important in determining whether an effective schools project, like other school improvement efforts, will be likely to succeed and how it should be implemented to bring about substantial change.

As noted earlier in this monograph, research on unusually effective schools indicates that their faculties are characterized by a problem solving orientation in designing and delivering instruction, high expectations and requirements for students, and commitment to the goal that all students learn as an ultimate criterion of their effectiveness. Shared beliefs stressing that faculty can identify and overcome problems so that all students can and will learn constitute cultural norms that can be viewed as components of a productive organizational culture which not only helps differentiate between effective and ineffective schools but helps account for the high performance of the unusually effective school.

Organizational culture has been a topic of increasing concern to both analysts and practitioners in business, education, and other types of organizations, in part due to growing recognition that effectiveness depends more on the extent to which participants work together productively than on preparation and implementation of detailed "rational" plans for step-by-step prescription of each person's actions and contributions (Peters, 1988; Vaill, 1989; Papalweis, Bushman, and Brown, 1989-90). For example, Ouchi (1981) argued that successful organizations tend to obtain their members' cooperation and commitment through selecting and socializing individuals (i.e., "clan mechanisms") rather than "bureaucratic" mechanisms that stress rules and performance evaluation. Purkey and Smith (1983:441) concluded that voluntary merging of organizational and individual "workplace beliefs and norms" brought about through "collaboration and participatory decisionmaking on a collegial basis" is more effective than "tightly-coupled, hierarchical" controls. Corbett, Firestone, and Rossman (1987:40) have found that "Viewing the school as a culture" provides an important "lens for understanding how teachers respond to change." Firestone and Wilson (1989: 276,278) pointed out that "previous studies have attended too much to bureaucratic linkages and too little to cultural ones. . . [which] with appropriate content can promote school effectiveness." Vaill (1989: 74:104) concluded that the "dynamic emerging opportunities and constraints of the environment and the evolving feelings of system members about how they are doing and what is possible" as shaped by the "mission or vision of grand strategy" of the organization's leaders are "far more important than any present plan about how to proceed." Elmore (1987,72) has summarized some of the important manifestations of organizational culture in schools in describing how:

> . . . students quickly recognize the absence of a common adult culture, other than that imposed by standard operating procedures, and exploit its absence by disengaging from learning and creating a complex youth culture that has little to with learning and that regards teachers as lying a standard deviation below parents, who in turn lie a standard deviation below the lead actors in television sitcoms.

One major issue regarding organizational culture involves the question of how it is influenced and shaped by leaders in the organization. In this regard, Schein, (1985: 2) has speculated that the "only thing of real importance that leaders do is to create and manage culture" and that there are five "primary embedding mechanisms" (what leaders measure and pay attention to, reactions to critical incidents and crises, explicit coaching and role modeling, allocation of rewards and status, and criteria for recruitment, selection, promotion, retirement, and "excommunication") and five "secondary articulation and reinforcement mechanisms" (design and structure of the organization, procedures and systems, physical space, myths and stories, and formal statements of philosophy) which leaders use to manage participants' interpretations of events and other aspects of organizational culture. In recent years particular attention has been given to ways in which both leaders and non-leaders may influence organizational culture through stories, legends, myths, analogies, rituals, ceremonies, sagas, images, parables, and related symbolic interpretations in various kinds of organizations (e.g., Deal and Kennedy, 1982; Taylor, 1984; Deal, 1985; Carlson, 1987; Firestone and Wilson, 1987; Wimpelberg, 1987a; Kuh and Whitt, 1988; Peterson, 1988; Smith and Peterson, 1988; Deal and Peterson, 1989).

Recent analysis by Peterson (1988) and Deal and Peterson (1989) also has drawn attention to a variety of means that principals use to develop an organizational culture that can facilitate greater school effectiveness. In addition to providing strong support for productive teachers, distributing "material, social, and symbolic" rewards to reinforce desired norms and roles, and recruiting a staff that supports the principal's vision of school improvement, effective cultural leadership involves treating crises as occasions for communicating and promoting central organizational norms and beliefs, as well as "modeling, teaching, and coaching" to support core goals such as professional development and enhanced teacher collegiality (Peterson, 1988). Deal and Peterson (1989:12) describe the "cultural dimensions" of the principal's job as involving "symbolic leadership" to affirm values through "dress, behavior, attention, routines", and other means, and action as a *potter* who shapes the school's "rituals, ceremonies, [and] symbols", a *poet* who uses language to reinforce and "sustain the school's best image of itself", an *actor* who improvises in the school's "inevitable dramas", and a *healer* who oversees "transitions and changes in the life of the school". The process of cultural leadership, according to these authors, generally involves a series of steps such as the following (Deal and Peterson, 1989:119-120):

- read the existing culture (or develop the vision of a *new* culture). Understand the inner workings of the school's values and norms and reflect on one's own hopes and fears for the school.
- identify the norms, values, and beliefs to retain, to reinforce, and to reject.
- decide to begin the process of shaping the culture.
- work with *all* the school's stakeholders to shape and illuminate the mission and purposes of the school.
- reinforce the core values and norms of the school through modeling, coaching, attention; the observation of ceremonies, rituals, and traditions; and the recounting of stories, anointing of heroes and heroines, and use of the informal network.
- creatively confront resistance and deal with conflict. Use these to reinforce and signal the mission of the school and the values of the culture. Celebrate success and affiliation in the culture.
- recruit and retain school people who accept and revel in the particular mission.
- establish potent transitional and celebratory ceremonies and traditions.
- regularly re-evaluate and assess the culture.
- continue reinforcing the norms and values...and *celebrate* the new culture and its successes.

A second major issue involves the extent to which fundamental, lasting improvement in organizational functioning can be brought about without systematic change and improvement in organizational culture, at least in the case of organizations which are functioning poorly in part because shared norms and beliefs are unproductive or dysfunctional. A closely related issue involves the reverse possibility that improvements in organization culture may be extremely difficult to bring about unless the organization is functioning at some minimum level of adequacy which allows participants to look beyond immediate, day to day problems and crises.

Unfortunately, little systematic research has been conducted to help leaders in schools or other organizations knowledgeably address issues and questions involving the extent to which change in organizational culture must take place very early in an effectiveness improvement project. As regards organizational culture and stages in school improvement, Taylor (1984) studied elementary schools engaged in effective schools projects and found that those which had made progress with respect to several aspects of organizational culture (i.e., development of a "working consensus" and "negotiation of rubber duck areas") showed signs of continuing and lasting improvement in functioning, whereas those which had not improved these aspects of culture had "plateaued" after registering some progress with respect to climate and achievement. In addition, Taylor concluded that progress in improving organizational culture in the schools she studied reflected principals' skills in using their "knowledge-in-action" to enhance "sensemaking processes" through "strategic communication episodes" and "units of strategic dialogue" (Taylor, 1984:177). As regards organizations in general, Kilmann (1989: 38) argues that the "culture track is the best place to commence the process of change," followed by overlapping stress on improvement in management skills, team building, strategy-structure, and reward systems. However, although Kilmann provides an example of an apparently successful application of this sequence at Eastman Kodak, comparative studies were not conducted to assess its utility across a number of differing kinds of organizations.

Although the generalization that organizational culture should be improved or, at least, attended to early in a school improvement project cannot be viewed as well established, it is reasonable to accept this conclusion as a working hypothesis given the many ways in which cultural considerations appear to be important in the development and implementation of such an effort. For example, the importance of a shared criterion of effectiveness stressing that all students can learn, faculty input in decisionmaking, a general orientation toward problem solving, and other culture-related characteristics of unusually effective schools cited earlier in this monograph suggests that explicit attention should be given to these and other aspects of organizational culture early on in an effective schools project. Indeed, multi-school projects to improve effectiveness on a systematic basis typically do pay attention to various cultural considerations during the initial stages of implementation. Frequently utilized instruments such as the Connecticut School Effectiveness Questionnaire and others cited in the preceding section on "Assessment of School Problems and Effectiveness" include items dealing with existence of a clearly articulated mission, the principal's role in developing shared understandings, the prevalence of high expectations for students, and other aspects of organizational culture, and much of the work of project facilitators usually focuses in one way or another on analyzing and improving the organizational culture of participating schools.

Despite the apparent centrality of cultural considerations in understanding and working to improve organizational effectiveness, it is somewhat uncertain whether and how knowledge or organizational culture and its dynamics can be used to improve outcomes in a planned, intentional fashion. In this regard, Vaill (1989: 162,158,157) has described the "conceptual and semantic swamp" organizations tend to get mired in when members try to develop clarity in their mission, as well as tendencies for activities aimed at improving organizational culture to degenerate into "off-site visioning seminars and spirituality workshops" that take the place of "active pursuit and fulfillment of the mission and vision." In general, he concludes, "those who would 'change the organizational culture' have a different and more difficult job than some of them seem to realize" (Vaill, 1989: 159). Similarly, Firestone and Wilson (1987: 283) have examined the literature on development of organizational culture in schools and concluded that "Until there have been more studies of the professional culture of schools, judgement must be withheld about how susceptible they are to administrative influences" exercised as part of a planned effort to shape participants' norms and beliefs.

Nevertheless, several authors have reported positive results regarding explicit attempts to modify organizational culture at schools participating in effective schools projects or similar school improvement efforts. Examples include the following:

- Miller (1982: 36) described developments at a school at which emphasis was placed on encouraging faculty to "take collective responsibility for what happened . . . [and for not blaming] the children or their parents for low achievement," as part of an effective schools project in a low income urban district. Consultants working with the faculty helped institute a "climate watcher's process" through which participants monitored their interactions to "avoid negative or stereotypical comments" and to increase "emphasis on positive discussion about all children's ability to learn" (Miller, 1982: 37). This emphasis on faculty norms regarding expectations for students along with other interventions such as introduction of academic team games and facilitation of faculty collaboration produced "encouraging" achievement gains.

- Deal (1985) described organizational culture aspects of an effective schools project in which consultants representing the Urban Coalition "coached a group of New York City elementary schools in developing their histories... Teachers, administrators, parents, and residents came together to reconstruct a school's experience, to weave private recollections and interpretations into a common story." In conjunction with numerous other efforts dealing with climate, leadership, instruction, expectations, and other effectiveness correlates, this approach to developing a "shared vision" produced "dramatic" gains in "achievement, morale, truancy, and vandalism" (Deal, 1985: 615-616).

- Taylor's (1984) study of 22 schools in five districts (including small town, big city, and suburban districts) engaged in school improvement activities scrutinized the principal's role in the development of organizational culture and the management of change. She found that almost all of the principals of schools which had improved in achievement and other indicators of effectiveness had articulated "early on the primary beliefs and attendant goals of the school improvement program in their own or in the school's terms." She also concluded that, "If the school's culture does not commit to these beliefs and/or have the capacity to reach the program goals, then the principal must first go about changing the culture of the school" (Taylor, 1984:58).

As contrasted with effective schools-type projects which include components dealing with faculty culture as part of a relatively comprehensive effort to improve educational programming and delivery, some organizational development approaches concentrate initial attention largely on organizational culture. For example, Furtwengler (1985, 1988) has described activities involving "an organizational process" intervention titled Reaching Success Through Involvement (RSI)which is designed to "alter the culture and climate of schools as a means of increasing discipline effectiveness" (Furtwengler, 1988: 1-2, in press draft). Through the formation of faculty and student leadership teams, collection and analysis of self-study data at inservice meetings and retreats, and development of plans for improving climate and instruction, participants work to change the "cultural norms of the school that are responsible for the school's level of effectiveness" (Furtwengler, 1985: 263-264).

Furtwengler reports that thirteen of the fourteen schools involved in initial RSI implementations clearly improved with respect to climate and discipline, and the schools which began with severe discipline problems were able to move beyond concern with "survival" to explicit consideration of issues involving curriculum and instruction (1985: 264). In the context of our preceding discussion of relationships between aspects of climate (e.g., order, discipline), organizational culture, and school effectiveness, one can view the RSI and similar approaches as a way to set the stage for substantial and lasting improvement in achievement and other performance outcomes, provided that faculties do not wait too long to seriously and systematically address instructional arrangements, curriculum alignment and coordination, provision of substantial staff development resources at the building level, and other effectiveness correlates most clearly involved in successfully designing and delivering curriculum and instruction.

VI

CONTEXT DIFFERENCES: GRADE LEVEL, SOCIOECONOMIC STATUS, AND RURAL SCHOOLS

BECAUSE MUCH OF THE RESEARCH on unusually effective schools has dealt primarily with elementary schools, particularly inner city elementary schools enrolling mostly working class students, many analysts have cautioned against automatically assuming that results and conclusions apply equally well for secondary schools and schools with a mixed or middle class enrollment (Wayson, 1988; Grady, Wayson, and Zirkel, 1989). In addition to these two major aspects of school context (i.e., grade level, socioeconomic status), many other contextual variables such as rural/urban location, public/private sponsorship and control, lack of experience/experience of staff, complex/simple instructional technology, strong/weak external pressures to improve, and voluntary/involuntary participation in an improvement project may well generate differentials in the characteristics that are associated with effectiveness at differing schools and in the kinds of changes that are likely to improve effectiveness (Hallinger and Murphy, 1987). Thus Wimpelberg, Teddlie, and Stringfield (1989) have argued convincingly that effective schools research in the future should pay increasing attention to considerations such as grade level, social class of the schools and community, availability versus nonavailability of additional resources from parents and the community, size of school and district, and other contextual factors that may have a large impact on school effectiveness and on the success of improvement projects.

Numerous contextual aspects that are important in analyzing and working to improve school effectiveness have been mentioned in preceding sections of this monograph. For example, we pointed out that leadership may derive primarily from the principal or, less frequently, other school leaders, that organizational cultures may support or resist change, and that heterogeneous grouping, individualization, and other instructional approaches are likely to be more workable and/or appropriate in some situations than others. We will neither repeat those points in this section nor attempt to identify and analyze all the remaining context variables that may have some relevance for practitioners and researchers concerned with the effective schools movement. Instead, the remainder of this section will summarize research and analysis that has been concerned with three of the most important aspects of context bearing respectively on **secondary schools, socioeconomic status,** and **rural schools.** We then conclude this section with some speculative comments regarding possible differentials in the sources of stimuli which can function to bring about improvement in different types of schools.

1. Secondary Schools

For various reasons, observers have expressed doubt that characteristics associated with unusual effectiveness in research conducted mostly on elementary schools also differentiate between effective and ineffective schools at the secondary level. For one thing, upper intermediate schools (i.e., junior highs and middle schools) and senior high schools usually are much larger and more complex than elementary schools (Pink, 1987). In addition, secondary schools generally have more diffuse goals (e.g., career preparation, dropout prevention, promotion of diversity) that frequently become more salient as students proceed through school, thereby complicating attempts to attain or identify unusual effectiveness (Arnn and Mangieri, 1988; Teddlie, and Stringfield, 1989). Third, measurement of performance is even more difficult than at the elementary level due to ceiling and floor effects in achievement testing, potentially negative effects on achievement scores of success in reducing dropouts, and other causes (School Effectiveness Unit, 1989). Finally, in our experience it frequently is considerably more difficult to convince secondary teachers to try promising approaches such as cooperative learning or mastery learning than is true with respect to elementary teachers. Consideration of specific correlates of effectiveness also raises questions concerning their functioning and applicability in large secondary schools. For example, successful instructional leadership involving the supervision of numerous subject area specialists may be very different than is true with respect to elementary school generalists (Little and Bird, 1987; Zirkel and Greenwood, 1987; Hallinger and Murphy, 1987), expectations may have little discernible impact if many students lack prerequisite learning skills, vigorous selection of teachers may fail to affect a critical mass of a large faculty, and administrators may be unable to monitor developments frequently and personally unless they (infeasibly) try to spend all their time "wandering around." In addition, some correlates such as students' "time-on-task" may have a vastly different meaning at the secondary than the elementary level (see below).

Nevertheless, some empirical studies as well as related analyses do support the conclusion that correlates associated with effectiveness among elementary schools also help in accounting for or, at least, in describing unusually effective secondary schools. Although systematic studies of effectiveness at the secondary level are much more difficult to carry out and are more susceptible to varying interpretations and criticisms, several analysts have reported that unusually effective secondary schools tend to exemplify correlates frequently identified in research on elementary schools. Thus researchers in California studied eighteen high schools which had been nominated as unusually effective and reported that they appeared to exemplify a "clear sense of purpose", "high expectations", "commitment to educate each student as completely as possible", and a "safe, orderly learning environment" (Murphy and Hallinger, 1985:18). Somewhat similarly, Garibaldi (1987) and Firestone (1989) and his colleagues independently examined information on two differing sets of high schools nominated as unusually effective and concluded that they ranked high on orderly climate, administrative leadership and support, and high expectations. Using data from the High School and Beyond database, Bryk and Thum (1989:26) found that high schools characterized by "committed faculty, an orderly environment, and a school emphasis on academic pursuits" had less absenteeism and dropping out after taking account of SES. In addition, a more intensive and systematic study of junior high schools in a suburban district in Louisiana found that those which had the highest achievement scores after controlling for SES also had the highest average scores on "low-inference" observation measures of classroom climate and management (Teddlie and Virgillo, 1988).

More important than the handful of studies that have attempted to identify differences between highly effective and ineffective secondary schools while controlling for SES, it is reasonable to assume that high expectations, productive climate, outstanding leadership, effective instructional arrangements, and other correlates discussed in the preceding pages are as important at the secondary as at the elementary level. Indeed, they may well be viewed as *more* important precisely because they are more difficult to attain in secondary schools. Furthermore, it should be noted that some of the studies cited in our discussion of correlates dealt wholly or partly with junior high schools or middle schools (e.g., Levine, Levine, and Eubanks, 1984). It is difficult, at least for us, to understand how a secondary school can be particularly effective in the absence of the kinds of characteristics identified in most formulations of correlates encountered in the effective schools literature.

However, since secondary schools generally are more complex and difficult to improve than are elementary schools, it almost certainly is true that unusual success at the secondary level involves action that goes "beyond" the usual correlates, as well as differing manifestations of the correlates in practice. In this regard, several authors have identified characteristics of unusual effectiveness which they believe have particular salience for secondary schools. Thus Hallinger and Murphy's (1985:18) analysis of successful high schools in California cites a "core set of standards within a rich curriculum", a "special reason for each student to go to school", a "sense of community", and "resiliency" in "bouncing back" from loss of funds and other crises as correlates of unusual effectiveness, and Firestone (1989:45) and his colleagues concluded that the high schools nominated for inclusion in their study manifested a high degree of "curriculum articulation" and "relevance" (i.e., "quality counseling", "career programs").

In a related formulation, Levine and Eubanks (1989:49) described several urban high schools they believed were unusually effective, and summarized some of their "commonalities" as follows: "concentration on improving comprehension" and other fundamental learning skills; "provision for alternative types of learning arrangements and experiences", and "substantial staff turnover and/or selection." Regarding intermediate schools, Levine, Levine, and Eubanks (1984) described a group of unusually effective inner city schools and characterized them in terms of their common emphasis on higher order cognitive development, students' personal development, and high expectations implemented on a schoolwide basis. In our opinion it is easy to understand how and why a "rich" and 'relevant" curriculum with alternative learning opportunities and career programs, substantial staff turnover, a sense of community, emphasis on both cognitive and personal development, resilience in the face of massive obstacles, and other, related characteristics are more difficult to attain and perhaps for this reason more crucial to success at the secondary than the elementary level.

As we mentioned above, some of the correlates usually identified for elementary schools may have little applicability or may function quite differently in secondary schools. An excellent example is provided by time-on-task variables, which numerous studies have associated with gain in student achievement at the classroom level and several authors have identified as a characteristic of unusually effective elementary schools (e.g., Stringfield, Teddlie, and Suarez, 1986). A recent study by Teddlie and Virgillo, however, reported that student time-on-task at "more effective" junior high schools (64% on classroom observation ratings) was clearly below the level registered at "typical" junior highs (73%). If replicated by other research, this type of differential pattern may mean that high time-on-task at the junior high level frequently is attained through expending class time on seatwork which keeps students occupied with low-level chores.

Our own experience in secondary schools supports this conclusion inasmuch as we have visited many high schools which would rank relatively high on time-on-task because their teachers stress meaningless seatwork designed partly to keep students busy. In one particularly deplorable situation, we came across an experimental program that received a low evaluation because students were being pushed to engage in active learning rather than seatwork, and hence received relatively low time-on-task scores. Such misinterpretation of a supposed effective schools or effective teaching correlate could have severely damaging implications and consequences for schools participating in an effective schools project: following the accepted dictum that comprehensive improvement efforts should collect and utilize data to guide implementation (i.e., should be "data driven"), administrators might well reinforce tendencies to stress unproductive seatwork in order to attain maximum student time-on-task.

Before concluding this section, we should note that our brief review of the scant literature dealing explicitly with unusually effective secondary schools has not included examination of a useful and growing strand of research that focuses on the establishment and functioning of small "alternative" units inside or separate from "regular" junior and senior high schools. Generally aimed at improving educational opportunities for disaffected and/or low achieving students, alternative units can overcome many of the problems that hamper effective instruction for a significant proportion of "marginal" students (Levine, 1975; Wehlage, 1983, 1988; Druian and Butler, 1987; Orr, 1987; Wehlage, Rutter, and Turnbaugh, 1987; Gerics, 1989).

In addition, we believe it is clear that alternative units and programming should be an important part of effective schools planning for improving secondary students' achievement through restructuring of high schools. Even if it accomplishes nothing else, a thoughtful plan for introducing alternative units at least directly addresses underlying "triage" issues that bedevil many high school faculties when they work to retain and assist alienated or dropout prone students without detracting from standards or expectations for other students who are experiencing more success in existing programs. Issues involving the relationships between regular and alternative programming should receive high priority in future research on the development and implementation of effective schools projects in junior and senior high schools.

As regards research and experience concerned with differences between the elementary and secondary levels in designing and implementing plans to create unusually effective schools, little guidance currently is available beyond considerations cited or alluded to the preceding pages (e.g., stress provision of a "rich" curriculum that gives each student a reason to attend, establish appropriate alternative units and programs). However, based largely on our personal knowledge of developments at junior and senior high schools at which faculties have experienced some success in grappling with the difficult challenges involved in fundamentally improving instruction, we believe it is particularly important to reach agreements concerning the learning skills and objectives that will be emphasized and, equally important, tested in each secondary subject and grade level.

Lacking such agreement among faculty in a given school, it is very difficult to hold students to high expectations and requirements across sections and course sequences, identify students who require additional help provided as part of a plan to enhance institutional effectiveness, or develop a unified school mission. Such problems generally seem to be more acute at the secondary than the elementary level, perhaps because high school instruction usually is more fragmented and uncoordinated. Reaching agreement on key skills and objectives to be stressed in instruction and testing thus appears to be a key step in carrying out plans for school-wide improvement in effectiveness at many upper intermediate and senior high schools (Benore, 1989).

In the case of secondary classes, schools, or programs designed to help students most of whom initially are low achievers, another aspect of instructional coordination also seems to be particularly important. We are referring here to efforts to coordinate instruction across subject areas, for example by introducing vocabulary terms in several subjects during the same day or week, ensuring that management techniques are consistent from one class to another, and emphasizing reading and math skills that are immediately applicable in content studies such as history, science, and literature (Smith, 1989). Obtaining this type of coordination to support the learning of initial low achievers is easier to do in small alternative units which facilitate teacher collaboration in planning and delivering instruction, a consideration which helps account for the impressive achievement gains sometimes registered among low achieving secondary students in school-within-a-school units at inner city intermediate and high schools (Gooden, Lane, and Levine, 1989; Levine and Sherk, 1990).

4. Socioeconomic Status

The most comprehensive and important studies explicitly seeking to determine whether or how unusually effective low status schools differ from their more affluent counterparts have been conducted by Hallinger and Murphy (1985, 1986, 1987) and their colleagues in California, and by Teddlie and Stringfield (1985, 1989) and their colleagues in Louisiana. The California study involved extensive analysis of eight elementary schools, selected from among more than 3,100 statewide, which registered third and sixth grade reading and math scores above predictions based on socioeconomic status (SES) for three consecutive years beginning in 1978-79. Two of these schools were low in SES, two were classified as lower-middle, two were in middle income communities, and two were upper-middle (Hallinger and Murphy, 1986).

The researchers found that the unusually effective schools in their study were generally similar in the sense that both those which were relatively low and high in SES exemplified several of the commonly cited correlates, namely safe and orderly environment, a clear mission, capable instructional leadership, high expectations, a "well-coordinated curriculum", "monitoring of student progress", and "structured staff development" (Hallinger and Murphy, 1986:351). However, the data also indicated that the effective low SES schools differed from the effective high SES schools in the following ways:

- curriculum and instruction in the low SES schools were more narrowly focused on "basic skills", and alignment of curriculum with instruction was "moderate" rather than "tight".
- instructional leadership emphasized both "technological" and "climate" goals, whereas administrators in the high SES schools primarily stressed technological goals.

In addition, though principals in both types of schools "played an active role in coordinating curriculum and instruction", those in unusually effective low SES schools were "more forceful in asserting themselves in making instructional decisions and in intervening in classrooms where teachers were not meeting their expectations" (Hallinger and Murphy, 1985:3). The data also suggested that principals in high SES schools can succeed using a "more collaborative and collegial style of decision making" than can principals in low SES schools (Hallinger and Murphy, 1985:343).

- homework expectations were "low to moderate" rather than "high."
- control of instruction by the administration was "high" rather than "low to moderate."
- administrative task orientation was "high" and relationship orientation was "low to moderate", rather than "moderate" and "moderate to high", respectively.
- "home-school cooperation" was weak and parent involvement was "limited", rather than "strong" and "pervasive", respectively.
- "rewards and recognition" were relatively frequent and visible rather than less frequent and intrinsic.
- high expectations for students originated largely from the school rather than the "home and school", and "future expectations" for students were "moderate" rather than "high" (Hallinger and Murphy, 1986:337).

As pointed out by Hallinger and Murphy, the differences they found between unusually effective low and high SES schools make sense theoretically because it is logical to conclude that improvement in the typical low SES school requires more active leadership, more profound climate improvements, and more focused faculty action than is true in the typical high SES school where achievement and climate already are relatively satisfactory. Given their very low starting point with respect to expectations for students, effectiveness of instructional arrangements and curriculum, functioning of rewards and recognition, and other factors, low SES schools require stronger and more comprehensive initiatives, as compared with high SES schools. These differentials also imply that "successful leadership in one type of organization may be ineffectual in another" (Hallinger and Murphy 1985:3).

In close agreement with the findings reported by Hallinger and Murphy, Teddlie and Stringfield and their colleagues studied a sizable sample of 76 elementary schools in Louisiana and found that the clearest differential between unusually effective and less effective middle SES schools involved a tendency for teachers in the former group to push students harder academically and to take greater "responsibility" for students' achievement than did teachers in "typical" middle SES schools. As regards low SES schools, expectations and aspects of academic climate also were higher in the unusually effective subset, and teachers in the unusually effective low SES schools placed a greater emphasis on reading, math, and homework than did teachers in the less effective low SES schools. In addition, principals in the more effective low SES schools apparently visited classrooms more frequently and played a larger role in hiring teachers than did principals in the less effective low SES schools. Thus the California and the Louisiana studies agreed in concluding that focussed instruction and active administrative leadership seem to be more clearly associated with unusual effectiveness in low SES that in higher SES schools.

3. Rural Schools

Although several authors have asked whether or how unusually effective rural schools may differ from unusually effective urban schools, hardly any research has addressed this issue explicitly. Paucity of research of this kind is not surprising inasmuch as rural schools and districts are very diverse and there is no commonly-accepted definition to facilitate their identification and classification (Levine and Havighurst, 1989).

One of the few studies that has specifically examined possible differences bearing on the definition and enhancement of effectiveness between rural and urban schools is an investigation at a rural school of short-term awareness sessions, graduate level courses, and "actual conduct" of a "school assessment and improvement process" involving the literature on effective schools (Buttram and Carlson, 1983:73). The authors concluded that: it was difficult to focus faculty attention on the achievement of disadvantaged students; climate concerns tended to "revolve" around the adequacy of instructional space and building maintenance; assessment of leadership at small schools lacking principals centered on head teachers or other leaders; lack of resources for staff development time and travel and for development and implementation of an improvement plan was a particular problem; traditional indicators of student SES did not appear to be reliable; and the awareness stage seemed to last for an inordinately long time (Buttram and Carlson, 1983: 75-76). More research is needed to determine whether these kinds of problems are particularly or unusually widespread among rural schools participating in an effective schools project.

Among observers who have attempted to analyze rural schools from the viewpoint of the literature associated with the effective schools movement, Lomotey and Swanson (in press) speculate that rural schools tend to be smaller, more ethnically homogeneous, and more "nurturing" and community centered than "typical" urban schools; these qualities, the authors conclude, could allow rural schools to become the rural counterparts of effective urban schools through the application of "school based decision-making" with adequate supportive services. More directly concerned with disadvantaged students in rural areas, Conklin and Olson (1988:5) assessed the literature on effective schools for implications "most relevant to poor, minority, rural and isolated educational settings." Although Conklin and Olson concluded that the small size and isolation of rural schools frequently inhibit "attention to unique needs of disadvantaged" students, rural schools may be in a relatively advantageous position to develop faculty consensus, work productively with parents and the community, and involve students in school activities. Particular emphasis in planning to enhance rural schools' effectiveness, they also concluded, should be placed on ensuring that there is "cultural relevance in curriculum materials and teaching techniques" (Conklin and Olson, 1988:3, 6-10, 15).

In general, there currently is little or no reason to believe that correlates we have identified as characterizing unusually effective schools are less important or relevant in rural than urban settings, even though most of the research has been conducted in urban schools and, in many cases, in poverty areas in big cities. Although analysis cited above suggests that resource limitations typical of many rural schools may constrain implementation of effective schools projects, this disadvantage may be counterbalanced by considerations facilitating communications and student involvement at small schools in rural areas. Overall, however, it appears that effective schools approaches should be as useful in improving education in rural as in urban schools.

4. Impetus for Improvement

Beyond the research-based contextual differences cited in the preceding pages, differing types of schools may differ greatly with respect to sources of stimuli for bringing about substantial improvement in their functioning and performance. More specifically, we have in mind the probability that from some points of view it is easier to create faculty consensus regarding the need for fundamental improvement in low achieving, inner city schools at which achievement is dismally low, than is true at higher SES schools and rural schools at which average achievement may appear to be acceptable.

In the case of schools enrolling mostly low SES students, achievement frequently is so low that it is difficult to publicly deny the need for radical reform in instructional and organizational arrangements. Particularly since low SES schools typically have substantial federal and state funding that provides a base to initiate meaningful change, failure to do so suggests that serious obstacles must be present such as low expectations (i.e., the belief that many students cannot learn much), poor leadership, unwillingness to engage in time and energy consuming change efforts, inadequate technical assistance, constraints involving external regulations or teacher contracts, or all of the above. But at least faculty can move to an examination of these obstacles without quibbling over the need for improvement.

By way of contrast, the situation at mixed class or middle class schools with average or above average achievement may appear deceptively satisfactory. In many if not most such schools, however, disaggregation of achievement data would show historically widespread patterns wherein low SES and/or minority students score much lower than higher SES or nonminority students, scores for all groups are relatively much lower on fundamental learning skills such as reading comprehension and math problem solving than on mechanical sub-skills, and/or girls have much lower scores in mathematics and science than do boys. Disaggregation of achievement data by SES, race/ethnicity, and sex would make these discrepancies instantly apparent.

Since there is no inherent reason why faculty cannot prepare and analyze disaggregated data for students in their own school, even if central office personnel fail to provide data on a disaggregated basis, we must conclude that failure to disaggregate at the school level represents at best a lack of serious concern regarding the performance of students, particularly disadvantaged students, on fundamental learning skills. If we believed in conspiracy theories, we might further conclude that faculty in such schools are participating knowingly or unknowingly but actively in a larger system organized to perpetuate social and economic disadvantages. In any case, creating an initial impetus for improvement at schools which do not disaggregate achievement data frequently will require intervention on the part of the central office, state government, community leaders, or other external agents. Failure to do so will leave many schools which have high average achievement scores but low scores among disadvantaged students in a position analogous to that of the bus driver who failed to stop for some passengers because that would make him look bad by "disrupting" his schedule.

Students with severe disabilities in the general education program: A conceptual and practical framework for rural school administrators

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Abstract

The possibilities of merging general and special education may assist rural school districts in providing a quality education for all students. The author proposes a conceptual framework to guide decision making, to define current practices, and to develop alternatives when educating students with disabilities within the structures of the general education program in rural settings. These options offer alternatives which can enhance the effectiveness of the entire school program.

Rural school administrators are no different than their urban counterparts in their concern for quality education. According to recent surveys, rural school effectiveness has been at the top of research priorities for rural school personnel (Barker & Muse, 1983; cf. DeYoung, 1987; Dunne & Carlsen, 1981; Helge, 1985). From these surveys, it could be assumed that rural school administrators would want a quality education for all their students, including those with disabilities.

P.L. 94-142 intended to improve the quality of education for students with disabilities by mandating that public schools provide a free, appropriate, public education in the least restrictive environment. Over a decade after passage of the act, it was determined that students with severe disabilities were often unserved or underserved, and were most in need of improved services (Office of Special Education and Rehabilitative Services, 1987).

Rural schools in particular have been targeted as needing specific improvements in serving students with severe disabilities (OSERS, 1987), and rural administrators confirm that these students are the most difficult population to serve (Helge, 1984). Rural schools historically have struggled with meeting state standards using limited resources (Sher, 1988). Stephens and Turner (1988) acknowledged that "projected increases in the eligible pool of handicapped students would, of course, complicate further the programming, staffing, and financial difficulties faced by rural, small school district superintendents and boards of education" (p. 62).

The possibilities of merging general and special education (Lilly, 1988; Reynolds, Wang, & Walberg, 1987; Stainback & Stainback, 1984; Will, 1986) may assist rural school districts in providing a quality education for all students. The cost of special education was estimated at 2.3 times more than general education programs, and the cost of segregated special education placements averaged 31% higher than costs in less restrictive environments like resource rooms (Decision Resources Corporation, 1988). Given these estimates, rural administrators can seriously consider less restrictive environments and the restructuring of general and special education in their rural districts.

One central tenet of the collaboration between general and special education is that students with disabilities would not be bussed to a special educational setting to receive services, but would attend the closest school in their community–their home school (Thousand, Fox, Reid, Godek, Williams, & Fox, 1988). Based on the effective schools research which supports site-based management (Bickel & Bickel, 1986; Rosenholtz, 1985), school principals, with the support of their superintendent, can assume the primary responsibility for general and special education in their schools.

Descriptions of exemplary rural programs have provided examples of how rural special educators are attempting to meet the needs of students with severe disabilities (Budde, 1983; Condon, 1983; Helge, 1984; Snart, 1985; Tawney, 1979), including strategies used to serve rural students in the least restrictive environment (Helge, 1986; McKenzie, Hill, Sousie, York, & Baker, 1977; Singer, 1984; Thousand, et al., 1988; Zeph, 1983). However, rural school administrators need a broader framework in which to make decisions that will have an impact on all students within the entire education program (Gartner & Lipsky, 1987)–a framework which is informed by theory based research in educational administration.

This article will first present a conceptual framework that rural school administrators can use to guide decision making for all students. Second, rural school administrators can use the framework to define current practices in their districts. The results of a recent study will illustrate this process. Third, the conceptual model will be used to develop alternatives for educating students with disabilities within the structure of the general education program in rural settings. The alternatives presented can enhance the effectiveness of the entire school program.

This article is not a comprehensive analysis of the issues surrounding the integration of students with special needs into the general education classroom. Rather, it seeks to briefly outline aspects supportive of integration and then presents school administrators with a tool to examine integration practices within their schools.

Conceptual framework

To help modern managers make sense of and use the knowledge emanating from the plethora of organizational studies and theories, Bolman and Deal (1984) categorized the related research and literature into four frames. Their approach is a response to the question: "What does organizational theory and research have to say that is genuinely important and useful to practitioners?" (p. xiii). These authors further proposed that:

> "*...frames are windows on the world... Frames help us to order the world and decide what action to take. Every manager uses a personal frame, or image, of organizations to gather information, make judgments, and get things done... Understanding organizations is nearly impossible when the manager is unconsciously wed to a single, narrow perspective... managers who understand their own frame–and who can adeptly rely on more than one limited perspective–are better equipped to understand and manage the complex everyday world of organizations.*" (pp. 4-5)

The frames in part:

- "*Tell the individual what is important and what can be safely ignored.*
- *Group a lot of different pieces of information into patterns or concepts.*" (p. 16)

The four frames Bolman and Deal (1984) used to categorize organizational theory included the structural frame, human resource frame, political frame, and symbolic frame. While not comprehensive, some basic assumptions and limitations of each frame are presented in Table I.

Table I
Bolman's and Deal's (1984) Conceptual Framework of Organizational Theory and Behavior

Structural Frame
Assumptions
1. Organizations exist primarily to accomplish established goals.
2. For any organization, there is a structure appropriate to the goals, the environment, the technology, and the participants.
3. Organizations work most effectively when environmental turbulence and the personal preferences of participants are constrained by norms of rationality.
4. Specialization permits higher levels of individual expertise and performance.
5. Coordination and control are accomplished best through the exercise of authority and impersonal rules.
6. Structures can be systematically designed and implemented.
7. Organizational problems usually reflect inappropriate structure and can be resolved through redesign and reorganization.

Limitations
1. Fails to see that human behavior is sometimes irrational.
2. It avoids power and conflict.
3. Rationality only is applicable in certain and predictable processes and outcomes.

Human Resource Frame
Assumptions
1. Organizations exist to serve human needs.
2. Organizations and people need each other.
3. When the fit between the individual and the organization is poor, one or both will suffer.
4. When the fit is good between the individual and the organization, both benefit.
5. Conflict is seen as a failure of leadership.

Limitations
1. It tends to impose middle class values.
2. Ignores individual differences.
3. Too optimistic about integrating individual and organizational needs.
4. Has a negative view of authority, and has not addressed power and scarce resources.

Political Frame
Assumptions
1. Most of the important decisions in organizations involve the allocation of scarce resources.
2. Organizations are coalitions composed of a number of individuals and interest groups.
3. Individuals and interest groups differ in their values, preferences, beliefs, information, and perceptions of reality.
4. Organizational goals and decisions emerge from ongoing processes of bargaining, negotiation, and jockeying for position among individuals and groups.
5. Because of scarce resources and enduring differences, power and conflict are central features of organizational life (p. 109). (Conflict is unavoidable and can be productive).

Limitations
1. Underestimates the significance of rational and collaborative processes.
2. The frame is cynical and pessimistic.
3. It tends to be amoral. It is not important what you accomplish, but whether you win.

Symbolic Frame
Assumptions
1. What is most important about any event is not what happened, but the meaning of what happened.
2. The meaning of an event is determined not by what happened, but by the ways that humans interpret what happened.
3. Many of the most significant events and processes in organizations are substantially ambiguous or uncertain –it is often difficult or impossible to know what happened, why it happened, or what will happen next.
4. Ambiguity and uncertainty undermine rational approaches to analysis, problem solving, and decision making.
5. When faced with uncertainty and ambiguity, humans create symbols to reduce the ambiguity, resolve confusion, increase predictability, and provide direction. Events themselves may remain illogical, random, fluid, and meaningless, but human symbols make them seem otherwise. (p. 150)

Limitations
1. Tension with rationality
2. Looks at appearances.
3. When symbols do not have common meaning, they may not be understood.
4. Masks or inflates your original goals.

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Current practices

One useful way for the rural school administrator to utilize Bolman's and Deal's (1984) frames is to illuminate current special education practices in their district and/or school. To illustrate the function of the frames, results of a recent study that focused on rural students with severe disabilities (Capper, in press-a) will be described. The study explored the product, the process, and the rural context of implementing P.L. 94-142 with students with severe disabilities. The results of the study confirmed and illustrated issues associated with meeting the needs of these students in rural settings that were reported in the literature and from practitioners.

Structural frame

Current practices for rural students with severe disabilities, from the structural view, included classroom location, school policy, and curriculum. Most services for this population take place in school-based "units" where all students labeled as moderately to severely disabled are bussed.

The classrooms are located away from the general education classrooms in a separate wing, hall, or building. School policies either did not include students with disabilities, or special needs were allocated a separate section in the faculty or student handbook.

For example, grading procedures for general and special education were in separate sections of the school handbook. Also, one school's floor plan, located in the student handbook, did not include the rooms for students with special needs.

In terms of curriculum, while much attention was given to general education students' basic skills achievement, the curriculum for students with severe disabilities was virtually non-existent. Student instructional time ranged from 0% to little over 33% of the school day.

Human resource frame

Two primary practices from the human resource perspective were the assumption that students with severe disabilities have very limited human potential, and the belief that "special services" are the most effective means of working with these students. Education was provided mostly on a "feeling sorry for" basis, rather than encouraging the development of individual potential.

In an example, one principal stated "you know, there isn't much we can do except make her comfortable... it's too bad these things happen." Probably due to rural school administrators emulating urban service delivery (Capper, 1988b), they perceived that separate service delivery was most effective. Another administrator proudly described the separate transportation service for students with moderate to severe disabilities and described separate buses, bus drivers, and bus aides that picked up students "right at their front door." He did not seem to consider the benefits for these students when attending their own, local school. He also did not consider the fact that because none of the bussed students with special needs were verbal, and since several students exhibited challenging behaviors, positive models of social interaction were non-existent.

Political frame

The political perspective illuminates three other current practices for rural students with severe disabilities in the areas of scarce resources, competition for limited funding, and lack of bargaining power. Because the reviewed rural school districts often did not have adequate resources to meet state mandates, and personnel believed students with severe disabilities had limited potential, these students were a low priority on the budget allocations. Teachers received very little support for instructional materials. Rather than a concern for a quality education for all students and allocating resources accordingly, the special and general education components were viewed as competing for these scarce resources.

Rural parents and their children with severe disabilities had little power in influencing services (see a related article Capper, 1988a). Advocates were not easily accessible and parents were not organized to support change.

Symbolic frame

The symbolic frame is perhaps more difficult to utilize in conceptualizing current practices in rural schools. As can be confirmed by the research and literature on school culture, this frame is vitally important. Rural school administrators can consider what "message" the practices in structural, human resource, and political frames are conveying to school personnel, students, and the community about what is valued in the school. Historically, compliance indicators have been used to symbolize meeting student needs appropriately.

In Capper's (in press-a) study, even though all three districts were technically in compliance with P.L. 94-142, the dearth of instruction time and the lack of social interaction with peers would lead one to question the meaning of the school day for these students. In addition, the student isolation and the lack of peer interaction conveyed a message to general education students that persons with disabilities have little to offer and have less human value (Lipsky & Gartner, 1987). Not only can the four frames be used to analyze current practices in rural education (see summary in Table 2), but the frames can also guide the development of goals and processes for restructuring general education to meet the needs of all students.

Herbers (1988) and Holbrook (1988) discussed how local school administrators can use frames to organize the process of integrating students into the general education program. The focus of this paper has been to develop positive goals for both general and special education, while considering all four perspectives in that development.

Table 2

Conceptualizing Current Practices in Rural Special Education
Structural Frame

1. Classroom isolation
2. A limited curriculum
3. Not an integral part of school policies

Human Resource Frame

1. "Special services" are most effective
2. Students are perceived as having limited human potential

Political Frame

1. A low priority in budget allocations
2. Special and general education compete for resources
3. Parents and students have little bargaining power

Symbolic Frame

1. Use compliance indicators to symbolize meeting student needs
2. Student isolation and lack of peer interaction conveys a value of intolerance for human differences

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New possibilities for all students

Bolman and Deal (1984) contend that:

"...*Each frame has its own vision of reality. Only when managers can look at organizations through the four are they likely to appreciate the depth and complexity of organizational life. Successful managers rely intuitively on the different frames, blending them into a coherent, pragmatic, personal theory of organizations.*" (p. 6)

Thus, when rural school administrators consider the restructuring of general and special education in their own school, they can consider all four frames. Examples of how rural school administrators can use the four perspectives to develop integrative goals for all students are described and summarized in Table 3.

Summary

There can be no doubt that rural school administrators would desire a quality education for all students, including those with even the most severe disabilities. Restructuring rural schools and ushering in a collaborative arrangement between general and special education can be one step towards extending limited resources and instituting a quality education for all students.

The utility of the multiframe view supported by the literature in organizational theory and behavior, and advocated by Bolman and Deal (1984), is that it forces rural school administrators out of viewing their schools from narrow and limited perspectives. In addition, the frames provide school administrators with a decision making structure to define current practices and outline future goals with a vision that encompasses all students regardless of differences in learning. In the midst of the current increase in student diversity in our rural schools (Capper, in press-b), a multiframe perspective can assist rural school administrators in moving from surviving to thriving, and not only to face the challenges of student diversity, but to embrace them.

Table 3
New Possibilities for All Students

Structural Frame

1. Students attend general education classrooms in their local school.
2. School policies include all students in an integrated way.
3. Special and general education teachers share expertise.

Human Resource Frame

1. Practice of developing optimum human potential in each student.
2. Education seeks to be focused on student needs, rather than the student forced to adapt to the existing programs.
3. Learning is cooperative rather than competitive, and supportive of student differences.

Political Frame

1. Families and students with and without disabilities form a united coalition to obtain more resources from state levels.
2. Families advocate for one another.
3. Rural districts have their own system advocate for state level influence.

Symbolic Frame

1. School philosophy and vision pertain to all students.
2. State award (i.e., for excellence or effectiveness) include criteria for all students.
3. All school rituals and ceremonies (i.e., awards day, graduation) are for all students.

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Original use of knowledge better indicator of mastery than standardized testing

Standardized achievement testing needs to be replaced by more "authentic demonstrations" of student mastery, according to two researchers at the University of Wisconsin-Madison.

The researchers, Doug A. Archbald and Fred M. Newmann, define an "authentic" show of mastery as testing that engages students in the original use of knowledge or, as they put it, the "production, rather than reproduction, of knowledge."

Real life tasks such as writing letters, filing insurance claims, speaking a foreign language, or building a stereo cabinet contain three features ignored in most testing, say Archbald and Newmann. First, they produce something tangible, whether it be discourse, a thing, or a performance. Second, the time devoted to production is set more by the nature of the task than by bureaucratic requirements. And third, the outcome requires collaboration with others.

In contrast, most standardized tests "diminish the authenticity of the achievement" by asking students about discourse, things, and performances produced by others; sticking to institutional time schedules; and focusing on students working alone.

In place of such testing, Archbald and Newmann propose a four-part assessment plan. Part one of the plan calls for teachers to develop techniques for the authentic assessment of student coursework. This might involve more authentic multiple-choice tests, more meaningful writing and speaking tasks, or student exhibits that demonstrate learning. Part two of the plan is the development of departmental assessments to balance standardized test scores. Part three consists of an annual achievement fair where students exhibit some significant academic accomplishment. Written products, video and audiotapes, computer demonstrations, and dramatic performances may all be included. Finally, Archbald and Newmann propose that students take part in pre-graduation exhibitions where they are asked to complete a project that demonstrates authentic mastery of a topic by synthesizing what they have learned in several courses.

Ordering Information: *Beyond Standardized Testing* is available from the National Association of Secondary School Principals, 1904 Association Drive, Reston, VA 22091 (65 pages, $7 prepaid).

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TASPP BRIEF
Technical Assistance for Special Populations Program

Volume 2 Number 2

ISSUES IN VOCATIONAL EDUCATION FOR SPECIAL POPULATIONS IN RURAL AREAS

by Jay W. Rojewski, Ph.D.

Approximately one-quarter of this country's citizens (over 56 million) live in non-metropolitan (rural) areas (Brown, 1989; William T. Grant Foundation, 1988). As such, small rural districts continue to be an important component of public school enterprise.

- Small rural districts represent roughly two-thirds of all public school systems in the country and are responsible for educating between one-fourth and one-third of all public elementary and secondary age students, roughly 10 million students annually (Stephens, 1988; Veir, 1990).

Vocational educators in rural America face many unique problems and must often devise equally unique solutions in order to meet the needs of students with special needs. The degree of success which rural vocational educators experience in responding to the challenges and opportunities presented will determine the ability of their students to gain competitive employment and maintain an acceptable quality of life. This *BRIEF* identifies some of the problems practitioners face when serving students with special needs in rural vocational education programs and also examines solutions which have been proposed to eliminate these identified barriers.

Limited Access to Vocational Education in Rural Areas

Changes in the composition of the student population require that rural vocational education examines its role in the general high school curriculum and with students from special populations. Rural schools report serving increased numbers and percentages of students who are either disabled, disadvantaged, considered at-risk, and/or represent cultural minorities. Current projections indicate that these trends will continue to increase in the near future (Helge, 1984, 1987; Parrish & Lynch, 1990; Posey & Hollenback, 1990).

Factors Limiting Access to Vocational Services

A number of factors impact on the delivery of vocational education to students with special needs in rural areas. First, access to vocational education in rural areas may be limited. Service delivery may be restricted by the following:

- **Isolation:** Increased transportation costs claim a high percentage of rural school resources and limit student access to quality vocational programs (Cole & Ranken, 1981; Helge, 1984; Jansen, 1988; Kerwood & Starsen, 1988).
- **Teacher Recruitment and Retention**: Difficulties in attracting and retaining qualified teachers and support personnel coupled with inadequate staff development activities limit the quality of staff in rural school districts (Cole & Ranken, 1981; Conklin & Olson, 1988; Helge, 1984; Jansen, 1988; Kirmer, Lockwood, Mickler, & Sweeney, 1984; Veir, 1990; Will, 1985).
- **Curriculum and Instruction:** Critics charging rural vocational education programs with providing substandard services have pointed to the following problems (Cole & Ranken, 1981; Elliott, 1988; Emerson & De Young, 1982; Jess, 1989; Kerwood & Starsen, 1988; Jansen, 1988; Parrish & Lynch, 1990; Schwartz, 1987; Stephens, 1988; William T. Grant Foundation, 1988; Veir, 1989, 1990):

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lack of program depth, breadth, and diversity

lack of appropriate vocational-related services including vocational assessment

limited opportunities for students to receive quality guidance and counseling assistance

- **Financial Support**: Weak tax bases and the high cost of rural education programs and services limit the ability of rural schools to adequately sustain vocational programs. Lack of financial support results in an inability to finance extensive support systems or purchase quality equipment such as shops, labs, libraries, and special equipment.

The Changing Context of Vocational Education in Rural Areas

Recent changes in rural America have resulted in the need to update rural vocational programs. High unemployment patterns, changing demographics and persistent underdevelopment of human resources characterize many rural areas. In addition, the shift away from manufacturing and agriculture toward service and information-based industry and business have dramatically changed the context of vocational education in rural America (Stephens, 1988). Problems with program relevancy and the quality of student outcomes in rural areas have been apparent. Vocational education is beset by the following difficulties in trying to provide relevant and quality programs (Elliott, 1988; Emerson & De Young, 1982; Jansen, 1988; Kerwood & Starsen, 1988; Schwartz, 1987):

Factors Limiting Program Relevancy and Student Outcomes

- outdated program offerings lacking in quality
- limited relevancy to the local job market and industry needs
- lack of local job experience opportunities
- lack of recognition by rural educators of vocational education's role in decreasing both the likelihood and impact of worker lay-offs or job displacements

The Role of Vocational Education in the Economic Growth of Rural Areas

Even if viable and relevant vocational programs exist, successful outcomes for students with special needs require the existence of a variety of post-graduation employment opportunities. Unfortunately, rural communities have experienced very low rates of growth in employment opportunities over the past decade. In fact, since 1979 rural employment has grown by only 4 percent compared to 13 percent for urban areas (Schwartz, 1987; William T. Grant Foundation, 1988). *"High unemployment rates, pervasive poverty, and an exodus of jobs and youth in many ways define rural communities in the late 1980's"* (White, 1990, p. 32). Because of this, questions have been raised as to the role which vocational education should have in the economic growth of rural areas.

The School as an Agency of Rural Economic Development

Some advocate that one key to success in rural communities is to view the school as an agency of rural economic development. Vocational education should in essence, "help rural educational institutions become job incubators and to help students become job creators, rather than simply job applicants" (William T. Grant Foundation, 1988, p.116). Vocational education has been shown to play a pivotal role in arresting economic decline in some rural areas. White (1990) asserts that "if Vocational Special Needs Education is to be effective in rural areas, schools will need to become 'entrepreneurial incubators,' and the responsibility for leadership will fall to those persons interested in connecting students to jobs and careers" (p. 32). Jansen (1988) cautions, however, that rural development can be inhibited by limited support services, limited levels of professional expertise, and limited role models.

There is a growing belief that the role of providing job-specific vocational training belongs at the postsecondary level rather than at the high school. This philosophy dictates that vocational education play a different role in the rural high school curriculum—not as a specific job skill provider but as a provider of opportunities for students to acquire an understanding of various occupational choices and help them master basic skills that will put them in a position to seek more specific occupational training (Field, 1984).

The necessity of continuing one's education at the postsecondary level in order to acquire specific vocational skills holds significant implications for special populations in rural America. Reports have shown that rural students typically remain in their local communities after graduation. Many students with special needs either won't or can't continue vocational training beyond high school often because of a fear of the unknown and reluctance to venture outside the safety of the community resulting in limited educational aspirations and decisions. Studies have also shown that fewer rural students either attend or graduate from college because their desire for better education and employment is perceived as impossible to achieve (Elliott,1988; Parrish & Lynch, 1990; William T. Grant Foundation, 1988). Sharratt (1988) noted that an urgent need exists for vocational education programs to prepare rural high school youth for the inevitable job market. He believed that the majority of students in rural communities face only one prospect—they must go to work. *If specific job skill training is eliminated from the rural high school curriculum, many students with special needs may face the prospect of obtaining entry-level jobs which offer little opportunity for career development or growth.* As the trend toward reduction of job-specific training in high schools continues, support systems must be developed which will encourage these students to attend postsecondary institutions with the aid of an unfragmented and coordinated transition effort.

Improving Vocational Education in Rural Areas

There is little doubt that rural vocational education programs face difficult challenges in serving students with special needs. However, rural communities possess many inherent strengths from which vocational educators may draw as they seek alternative models of instructional delivery. These strengths may include a strong work ethic, mutual support, early exposure to work, capability of rapid and innovative change, and family involvement in community activities.

Moreover, rural settings may possess distinct advantages over urban settings for vocational educators working with students with special needs. Smaller bureaucracies, reduced waiting periods, a willingness of rural educators to examine alternative delivery systems, greater familiarity with students, and immediate delivery of special support services upon identification of student needs may facilitate service delivery in rural schools (Sarkees & West, 1990).

Currently, a number of strategies enhance the provision of vocational services to students with special needs in rural areas. In general, alternatives place an emphasis on support services personnel, guidance and counseling, involvement of a variety of public and private service providers, more effective use of existing community resources, and modification of existing employment opportunities to address rural conditions (Veir, 1990). While some of these methods are unique to rural communities, others have been adapted from urban areas to fit the rural environment.

Educational Cooperatives

A popular and difficult alternative used to address rural problems in vocational program delivery involves the formation of educational cooperatives. Cooperatives join schools together for the purposes of sharing such resources as programs, staff, and technology (Cole, Smith, & Ranken, 1981; Long, 1982; McIntosh, 1986; Parrish & Lynch, 1990; William T. Grant Foundation, 1988). Either centralized or decentralized facilities provide vocational programming for the schools. School collaboration holds many potential benefits for those involved including (Helge, 1984; Jansen, 1988; Kerwood & Starsen, 1988; Kirmer et al., 1984; Parrish & Lynch, 1990):

- access to a greater variety of programs (vocational assessment, inservice training and staff development, and guidance and counseling by qualified personnel)
- greater economic efficiency and cost savings via shared staff and programs and the elimination of unnecessary duplication of effort

- advantage of joining together for services while maintaining the benefits of a small school
- reduction of resistance to change in rural districts

A cooperative strategy used with increasing frequency involves the consolidation or restructuring of school districts. Some professionals see school consolidation as inevitable (Stephens, 1988), while others are diametrically opposed to any movement toward eliminating rural schools. However, the effects of declining enrollments and resources are having a significant impact on individual school districts' ability to finance vocational education programs (Kennedy, 1989).

Actions which rural school administrators could take to assist vocational educators and students with special needs enrolled in vocational programs include the following (Forbes, 1989, p. 40):

Administrative Action

- schedule school day, week and/or semester flexibility
- share staff with other schools and districts
- share instructional resources with schools and districts
- use volunteers to instruct and provide other services
- integrate an outcome-based curriculum
- match class size with instructional mode
- employ part-time instructional staff
- differentiate staff roles
- coordinate social services and encourage involvement with students during high school

Mobile Facilities Units

Use of mobile classrooms to travel the long distances often found in rural areas has long been advocated (Jansen, 1988; Kerwood & Starsen, 1988). In rural, remote and sparsely populated areas, it may be more convenient to travel to students, rather than have students go to the program. Vocational mobile units include vans which drive from site to site, serving as mobile classrooms equipped with work space, assessment tools and training activities. Local business persons may participate by volunteering to talk to students about various occupations (Schwartz, 1987).

Use of Available Technology

Emerging technologies are seen as a means of providing easy access to educational programs traditionally not offered in rural areas. Proponents have argued that it is easier and cheaper to transport information than people, however, opponents cite the potential for competition, high costs of course development, effects of technology on students, teacher preparation, and a tendency to permit technology to dominate class activity as reasons to restrict use of technology. Regardless of the debate, it appears that the use of technology is on the increase. Commonly cited types of technology include the following (Forbes, 1989; Kerwood & Starsen, 1988):

- interactive video
- audio teleconferencing
- videotaped lessons
- one-way television
- personal computers networked to mainframe computers
- satellites
- two-way television (low power TV, cable, microwave, interactive TV, fixed service, and fiber optics)

School/Business Partnerships

The importance of developing effective partnerships between schools and business can apply equally to both urban and rural areas, however, the success of vocational programs for students with special needs in rural areas may be more dependent on these partnerships. It is impossible for rural vocational programs to employ the number of staff necessary to train students for all potential jobs in the community.

Entrepreneurship

Vocational programs in North Carolina and Georgia have assisted communities in creating a wide variety of enterprises. These programs focus on the following activities (White, 1990):

- developing viable productive enterprises in the local community, primarily using students with special needs supervised by high school faculty
- generating or attracting income-producing opportunities to the community
- coordinating local economic development efforts through the local high school
- training students with special needs in entrepreneurial skills
- stimulating ties between human and social service agencies which respond to local needs, interests, and circumstances

Conclusion

Students with special needs living in rural America face a difficult challenge as they prepare for employment and adult life. Vocational education programs can provide the assistance they require to be successful in this endeavor. This *TASPP BRIEF* has explored some of the issues surrounding the delivery of vocational education in rural areas. Solutions were discussed, however, there appears to be no one best method. Instead, vocational educators are urged to examine the needs of their local community and develop programs according to those identified needs (Kerwood & Starsen, 1988). By doing so collectively, the future for rural youth with special needs will be considerably brighter.

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Technical Assistance for Special Populations Program

The Technical Assistance for Special Populations Program of the National Center for Research in Vocational Education, University of California, Berkeley, is housed at the University of Illinois. Under the direction of Dr. Carolyn Maddy-Bernstein, TASPP produces materials, responds to inquiries about vocational programs for special groups, and provides an array of services for professionals serving special populations in vocational education.

This is the second in a series of TASPP BRIEFs for 1990. Single copies of this BRIEF and an annotated listing of all references cited in this BRIEF may be obtained by contacting Maureen Coyle-Williams, TASPP BRIEF Editor, at the above address. Any or all portions of this document may be freely reproduced and circulated without prior permission, provided the source is cited as the National Center for Research in Vocational Education, University of California, Berkeley, Technical Assistance for Special Populations Program.

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Children's Social Skill Deficits:

A Review of Assessment Methods and Measurement Issues

Stephen N. Elliott

University of Wisconsin-Madison

Presented as part of a symposium entitled
"Social Skills of Mildly Handicapped Students and Education in
Least Restrictive Environment" at the annual convention of the
American Educational Research Association
New Orleans, LA April 1988

The identification and treatment of socially deficient school children warrants the attention of both educational researchers and practitioners. This call for attention is based on the recent research which indicates social skill deficits in early childhood, if untreated, are relatively stable over time, related to poor academic performance, and may be predictive of social adjustment problems and serious psychopathology in adolescence and adulthood (Coie & Dodge, 1983; Coie & Krehbiel, 1984; Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Parker & Asher, 1987; Roff, Sells, & Golden, 1972). A number of investigators have documented that mildly handicapped students (i.e., learning disabled, behaviorally impaired, and mildly retarded) exhibit significant deficits in social skills (Gresham, 1981, 1982; Gresham & Reschly, 1986; Strain & Fox, 1981; Strain, Odom, & McConnell, 1984). Briefly, this literature suggests that mildly handicapped students display fewer positive social behaviors, show less initiative in peer interactions, exhibit lower rates of peer reinforcement, and display less cooperative behaviors than their nonhandicapped peers. In sum, children (handicapped and nonhandicapped) who persistently exhibit social skill deficits experience both short- and long-term negative consequences, and these negative consequences seem to be precursors of more severe problems later in life. Because of the relative paucity of formal measures of children's prosocial behaviors and a clear assessment framework, psychologists and educators face some significant assessment and treatment challenges. The purpose of this paper is to review both the process and content of social skills assessment and to identify major measurement issues which continue to challenge those of us interested in enhancing the social skills of children.

A Social Skills Definition and Classification Framework

Several definitions of children's social skills have been discussed in recent years. These definitions include the peer acceptance definition, the behavioral definition, and the social validity definition (Gresham, 1986). The most heuristic and pragmatic definition of social skills is the social validity definition. According to this definition, social skills are those behaviors exhibited in specific situations that help in predicting a child's standing on important social outcomes (Gresham & Elliott, 1987). Important social outcomes for children include (a) acceptance by the peer group, (b) significant others' (e.g., parents and teachers) judgments of social skills, (c) academic competence, (d) adequate self-concept or self-esteem, and (e) adequate psychological adjustment (i.e., absence of psychopathology). This definition essentially is a combination of the peer acceptance and behavioral definitions but is more comprehensive than either definition alone. Specific behaviors are identified and related to important criteria for indexing adequate social functioning.

Fundamental to any definitions of social skills are seven assumptions identified by Michelson, Sugai, Wood, and Kazdin (1983, p. 3):

1. Social skills are primarily acquired through learning (e.g., observation, modeling, rehearsal, and feedback).
2. Social skills comprise specific and discrete verbal and nonverbal behaviors.
3. Social skills entail both effective and appropriate initiations and responses.
4. Social skills maximize social reinforcement.
5. Social skills are interactive by nature and entail effective and appropriate responsiveness.
6. Social skill performance is influenced by the characteristics of an environment.
7. Deficits and excesses in social performance can be specified and targeted for intervention.

These pragmatic assumptions, along with the social validity definition, provide direction to assessment practices and treatment planning. In sum, social skills are learned behaviors that affect interpersonal relations with peers and adults. Social skills are not global personality traits; rather, they are discrete, situational specific behaviors that are affected by age, sex, social status, and other people with whom they interact.

Social skills deficiencies can be delineated into four basic types depending upon the child's knowledge of how to perform the social skill in question and the presence or absence of interfering cognitive, emotional, or behavioral responses (Gresham, 1981). This conceptualization of social skills deficits was influenced by Bandura's (1977) distinction between acquisition versus performance deficits and includes skills deficits, performance deficits, self-control skill deficits, and self-control performance deficits. It should be noted that this four cell classification schema, which is illustrated as Figure 1, is based on clinical observations and awaits empirical validation.

Insert Figure 1 about here

Target Behaviors for Assessment and Intervention

What are the behaviors of concern with socially deficient children? Of course, society (i.e., teachers, parents, peers) generally values individuals who cooperate, share, and are nice (reinforcing) to others. But what are the discrete, socially important behaviors that should be assessed and possibly treated? A study by Black (1985) provides us some insights into what teachers consider to be socially important behaviors. Black asked 125 teachers to rate the importance of each of the 50 social skills on the Social Skills Rating Scales (SSRS) developed by Gresham and Elliott (in preparation). Importance was rated on a three-point scale: 0 = the behavior is unimportant for success in my classroom; 1 = the behavior is important for success in my classroom; and 2 = the behavior is critical for success in my classroom. Table 1 displays the teachers' 10 highest rated and 10 lowest rated behaviors in terms of importance. As indicated by these ratings, the most important social behaviors deal primarily with classroom order and academic functions. These behaviors are important to classroom management and indirectly to getting along with others, but are not the central ingredients from which peer relationships are built. Gresham (1985) noted that many, if not most, mildly handicapped children originally are referred for special education because of their deviation with regard to these top 10 most important social classroom behaviors. The 10 (relatively) lowest rated behaviors primarily concern positive peer social interactions or social skills. Thus, suggesting teachers view these behaviors as relatively unimportant for classroom success. It is important to note that the 125 teachers (82 white and 43 black) in this study exhibited high agreement when rating the importance of behaviors for black and white children ($\underline{r}$ = .96), males and females ($\underline{r}$ = .93), and mildly handicapped mainstreamed and nonhandicapped children ($\underline{r}$ = .98).

Insert Table 1 about here

Since the Black (1985) study, Gresham and Elliott (in preparation) have conducted several large scale validation studies with the SSRS where importance ratings of social behaviors have been collected from a diverse sample of parents, teachers, and children. This data indicates the various groups of raters, in general, value behaviors that are indicative of compliance with adult directives or rules, but that parents and children generally rate cooperative and social initiating behaviors more highly important than teachers. Thus socially important target behaviors in social skills assessment involve response classes of behaviors indicative of "compliance," "cooperation," and "social initiatives" and can be characterized as rather situation specific.

In addition to prosocial target behaviors, one needs to consider an array of problem behaviors that may co-occur or interfere with the production of prosocial behaviors. Such behaviors generally have been characterized as interfering responses. The concept of interfering responses is crucial to understanding the self-control and performance deficits outlined in the previous classification model because it is assumed that these responses interfere with or effectively block the acquisition and/or performance of social skills. The term self-control is used here to refer to the higher probability of an interfering response (e.g., aggression toward a peer, not complying with a request, taking materials away form a peer) than a socially skilled response. Thus, an interfering response can be viewed as a controlling response that "controls" or prevents the acquisition or performance of a social skill response (i.e., the controlled response).

Interfering responses can be conceptualized via a triple response mode system such as that outlined by Nelson and Hayes (1979) to guide behavioral assessments. The three response modes for any behavior are: cognitive-verbal, physiological-emotional, and overt-motoric (See Table 2). Behaviors expressed through one or more of these response modes can interfere with acquisition and/or performance of a prosocial behavior. For example, anxiety (an emotional response) can either prevent the learning of appropriate social initiations to peers or the performance of such a social skill. Similarly, physical aggressive behavior (an overt-motoric response) can prevent the acquisition or enactment of social skills. Clearly, from our perspective the identification and treatment of interfering behaviors is critical to the successful performance of prosocial behaviors. Thus, one's social skills assessment and treatment plans must take into consideration the possibility of a wide range of both negative and positive target behaviors. It is indeed, a rare case where you assess and treat only a prosocial behavior.

Insert Table 2 about here

Assessment of Social Skills

Process of Assessment

As with the psychological assessment of any problem, the process of social skills assessment can be characterized by a series of hypothesis-testing sequences. Hypotheses are generated in an attempt to answer questions related to the identification/classification, intervention/program planning, and evaluation of intervention effects. Hypotheses may be generated based on whatever information is available at a given point in the assessment process and then tested at subsequent points through the gathering of additional information. Comprehensive assessments allow one to draw conclusions regarding problem severity, interfering behaviors, intervention strategies needed, and the degree of intervention success.

A standard procedure for assessing social skills does not exist. Rather, hypotheses generated dictate the direction of assessment, the questions to be answered, and the methods to be used. Assessment for classification should proceed from global to specific information so interventions can be planned. In contrast, assessment for the evaluation of intervention success typically proceeds in the opposite direction, moving from behavior specific outcomes to more global analyses of important social outcomes.

Ideally, practitioners should use assessment methods possessing the attributes of reliability (i.e., consistency of measurement), validity (i.e., capability of answering a given assessment question), and practicality (i.e., costs of collecting information) (Gresham & Cavell, 1986). Unfortunately, few social skill assessment methods meet all three criteria of reliability, validity, and practicality. Easily administered instruments (e.g., self-report scales) which are useful for screening purposes are of little help in designing interventions. Other methods requiring considerably more effort from assessors and clients (e.g., naturalistic observations and self-monitoring) often have equivocal or unknown psychometric properties (Dodge, Murphy, & Buschbaum, D. 1984; Gresham & Elliott, 1984). Moreover, there is a tendency for assessment data obtained from different sources to correlate moderately at best, and more often, to correlate quite low (Achenbach, Howell, & McConaughy, 1987). As a safeguard, multiple sources of information are required when assessing social skills.

Content of Assessment

Methods for assessing social skills vary along three primary dimensions: source, specificity, and temporal proximity of report to performance (Gresham & Reschly, 1988). Thus, methods can rely on different sources, such as parents, teachers, peers, trained observers, or the child him/herself. These various sources provide information that varies in specificity ranging from global descriptions to quantification of molecular behaviors. Finally, these methods of assessment may differ with respect to temporal proximity of report or observation to performance. The combination of these dimensions plus the content focus of the method influences the utility or purpose of an assessment. In general, the purposes of social skills assessments either concern identification/classification or intervention/program planning. The critical characteristic that differentiates identification/classification methods from intervention/program planning methods is the extent to which a method allows for a functional analysis of behavior. That is, the extent to which an assessment procedure provides data concerning the antecedent, sequential, and consequent conditions surrounding a rather molecular behavior. A review of many published social skills instruments and techniques follows in the next sections.

The extend to which an assessment procedure provides information about specific behavioral excesses or deficits determines its utility in planning interventions. Thus, in general, methods used to screen or initially identify children with social skills deficits will not also provide the behavioral objectivity and functional understanding of antecedent and consequent conditions necessary to conceptualize interventions. The most frequently used methods of determining the existence of a social skills deficits are rankings or ratings by others (i.e., teachers, parents), self-report, behavioral role play or analogue observational assessments, and sociometric tecnniques (Gresham & Elliott, 1984; Gresham & Reschly, 1988). Hops and Greenwood (1981) emphasized the use of sociometrics and rankings by others as the primary methods of screening, and noted that behavior ratings (depending on item specificity) could be valuable for designing interventions. I concur with Hops and Greenwood. Behavior rating scales that adequately sample the domain of social behaviors and situations, and that have normative information (preferably both on a national representative sample and for a small comparison group peers in the same environment), actually can be used for both screening and treatment decisions, if they allow for a functional analysis of the target behaviors.

Sociometrics. Sociometrics have a long history in applied research on children's friendships and social status (McConnell & Odom, 1986), yet they are used infrequently in assessing mildly handicapped children's social status. Two basic approaches to sociometrics have been prevalent in the research literature: peer nominations and peer ratings. These different approaches have begun to be used in combination to overcome some of the anticipated (yet unproven) side effects of negative nominations (Asher, 1985). Both nominations and ratings can be keyed to behavioral criteria, however, in most cases nominations are nonbehavioral (e.g., name three classmates you like most, you like most to play with, etc.).

In general, nominations are considered to measure popularity, whereas ratings are indicative of acceptance. A study by Gresham (1981) provided a comparison of these types of measures. Specifically, he administered two peer rating scales (play with and work with ratings), three peer nomination measures (best friends, play with, and work with nominations), and four categories of behavioral observations (initiating and receiving positive and negative interaction). Gresham then analyzed these nine measures using a principal components analysis which revealed three components or factors. The first component (Friendship) consisted of the three peer nomination measures, the second component (Social Interaction) was comprised of the four behavioral observation categories, and the third component (Likability) consisted of the two peer rating scales. This study clearly supports the assumption that peer nominations and peer ratings measure independent dimensions of children's social standing among peers.

A rather substantial number of studies have been published documenting the use of sociometrics, particularly the nomination method, to identify children at risk for poor interpersonal relations (e.g., Coie, 1985; Coie, Dodge, & Coppotelli, 1982). The research of Asher and Hymel (1981), Gresham and Nagle (1980), and Singleton and Asher (1977) are representative of investigations of the social status of handicapped students in mainstream settings.

Psychometrically, nomination and rating methods of sociometrics have been demonstrated to be stable over time (mdn $\underline{r}$ = .80) (Oden & Asher, 1977), to correlate moderately with direct observation measures of classroom behavior (Gresham & Nagle, 1980; Morrison, Forness, & McMillan, 1983), and to correlate moderately with teacher and parent ratings of social skills, adaptive behavior, and academic achievement (Reschly, Gresham, & Graham-Clay, 1984). In sum, sociometric measures have adequate psychometric properties and can be used with confidence to identify accepted, rejected, and/or neglected students in classrooms.

Rankings by others. Teachers' rankings of children have been used to select children for social skills interventions. This method simply requires a teacher to rank order children in his/her class according to behavioral (e.g., cooperates best, talks least, etc.) or nonbehavioral (e.g., has fewest friends, most disruptive, etc.) criteria. Those children with the poorest rankings are then prime candidates for social skills interventions. Several investigators have demonstrated that teacher rankings correspond to observed behaviors such as on task behavior, number of peer interactions, and rates of disruptive behavior (Bolstad & Johnson, 1977; Greenwood, Walker, Todd, & Hops, 1979).

The use of teachers' rankings of behavior or peer acceptance is in the spirit of using teachers as "tests" (Gresham, Reschly, & Carey, 1987) and has strong social and ecological validity. The research of Greenwood et al. attests to this point and further substantiates the psychometric value of teachers' rankings. Specifically, they found teacher rankings were stable (r = .81) over 1 month and correlated moderately with observations of free-play and assigned task situations. These researchers also noted that when given one ranking, 23% of the teachers could identify the child with the lowest frequency of interaction in their class and when given three rankings, 64% of the teachers could identify the lowest interacting child. Finally, when given five rankings, 77% of the teachers could identify the lowest interacting child. Thus, teachers' rankings of children's social behavior, like sociometrics, are useful for the identification of children who are at the extremes of some social interaction criteria and may benefit from social skills interventions.

Ratings by others. Behavior rating scales have become a mainstay in the assessment repertoire of most psychologists. Only recently, however, have such rating scales specifically been developed to assess the prosocial skills of children. Presently there are three published teacher rating scales of children's social skills: the Social Behavior Assessment (SBA) (Stephens, 1978, 1981); the School Social Skills Rating Scale (Brown, Black, & Downs, 1984); and the Waksman Social Skills Rating Scale (Waksman, 1983). In addition to these scales, two other rating scales are nearing completion/publication: the Social Skills Rating Scales (SSRS) (Gresham & Elliott, in preparation) and the Walker-McConnell Scale of Social Competence and School Adjustment (Walker & McConnell, 1988) to interface with the Walker Social Skills Curriculum or Accepts Program.

The Social Behavior Assessment was the first teacher rating scale of social skills developed and is quite comprehensive. Specifically, teachers are asked to rate 136 social skills as either "acceptable level," "less than acceptable," or "never." The 136 behaviors are grouped into 30 subcategories, which in turn are grouped into four broad behavioral domains entitled environmental behaviors, interpersonal behaviors, self-related behaviors, and task-related behaviors. The SBA has good psychometric characteristics with respect to reliability and validity. For example, interrater agreement coefficients in the .90s and stability coefficients ranging between .80 and .90 have been reported for each of the four main domains and total SBA scores. Coefficient alphas of .92 to .96 also characterize each of the four major domains (Stumme, Gresham, & Scott, 1983). Perhaps the strongest validity data for the SBA was provided in another Stumme et al. (1982) investigation when it was observed that the SBA correctly classified 83% of emotionally disturbed and normal mainstreamed students. In sum, the SBA is a technically sound teacher rating scale that should facilitate the identification of social skills deficits. The scale, however, is not normed and requires upwards of 75 minutes to complete. Both of these latter points limit its use for screening in schools.

The School Social Skills (S3) Rating Scale is a 40-item teacher rating scale for students K-12 that has received little attention in the research literature. Teachers are asked to rate behaviorally-specific items concerning adult relations (12 items), peer relations (16 items), school rules (6 items), and classroom behaviors (6 items) on a 6-point frequency scale ranging from "No Opportunity to Observe the Behavior" to "Always Uses the Skill Under Appropriate Conditions." One must rely on the test manual for psychometric information about the S3 given the paucity of published research on the scale. Unfortunately, the test manual does not provide much more than a description of two small scale (Ns of 30) investigations of test-retest reliability (mean *r* = .86) and inter-rater reliability (mean *r* = .75). No evidence of factor analytic work, predictive or discriminant validity studies with handicapped or not handicapped children are referenced in the S3's manual.

The Waksman Social Skills Rating Scale is a 21-item teacher rating scale that purports to measure social behaviors in two domains, Aggressive and Passive. This requires a teacher to rate the 21 brief, often nonbehavioral and negatively worded items (e.g., appears tense, fails to initiate conversation) on a 4-point frequency scale (never, seldom, often, and usually). The author characterizes the scale as a normative scale of social skills for children in grades K through 12. The norms were developed on a nonrandom sample of 330 males and females in Portland, Oregon. Some grades, however, are represented by as few as 4 students. As with the S3 scales, the Waksman Social Skills Rating Scale has received little attention in the research literature and consequently nothing is known about its contribution to the identification of social skill deficits in mainstreamed handicapped children. It is clear, however, that this scale is in no way comprehensive nor is it comprised of objective items that would allow for a meaningful assessment of a child's social behavior repertoire.

The Social Skills Rating Scales developed by Gresham and Elliott (in preparation; currently being nationally standardized by American Guidance Service) has been designed to offer consumers a norm-referenced, multirater (teacher, parent, and self) assessment of children's (ages 3 through 18) social skills. The SSRS is a 52-item rating scale comprised of four factors or domains: (a) Compliance, (b) Cooperation, and (c) Social Initiation. Teachers rate each of the 52 skills on a three-point frequency dimension (Often True, Sometimes True, or Never True). A unique feature of the SSRS is the inclusion of an importance dimension on which teachers specify whether each behavior is *critical* for classroom success, *important* for classroom success, or *unimportant* for classroom success. Having teachers evaluate behaviors using the importance criteria ensures the social validity of the behaviors being assessed and has implications for selecting target behaviors for intervention. For example, behaviors receiving a low frequency rating and a high importance rating should be top priority behaviors for social skills interventions.

The SSRS has a rather impressive amount of data attesting to its psychometric adequacy. Clark, Gresham, and Elliott (1985) demonstrated that the SSRS has a pure factor structure (using the simple structure criterion) and that the component factors are internally consistent (mdn $\underline{r}$ = .92). In addition, the SSRS total score correlates moderately with teacher ratings of academic achievement (mdn $\underline{r}$ = .63) and correlates negatively with the total score of the Walker Problem Behavior Identification Checklist ($\underline{r}$ = -.54). Gresham, Elliott, and Black (1987a) replicated the factor structure obtained by Clark et al. (1985) showing coefficients of congruence exceeding .90 for all vector comparisons. In addition, Gresham et al. (1987b) showed that teacher race, student race, student gender, and student grade level accounted for little variance in teacher ratings of social skills on the SSRS suggesting the scale is not biased against these groups. Gresham, Elliott, and Black (1987b) showed that teacher race, student race, student gender, and student grade level accounted for little variance in teacher ratings of social skills on the SSRS suggesting the scale is not biased against these groups. Gresham, Elliott, and Black (1987b) demonstrated that the SSRS could correctly classify 75% of children into mildly handicapped and nonhandicapped subgroups.

Recent SSRS investigations have focused on concurrent and discriminant validity with special populations such as preschoolers (Elliott, Gresham, & Barnard, 1988), behavior disordered adolescence (Elliott & Gresham, 1988), low status (rejected, neglected) students (Elliott & Gresham, 1988), and LD students (Gresham & Elliott, in submission). A detailed accounting of these studies is outside the focus of this paper, however, the evidence can be summarized as indicating (a) the SSRS contributes significantly to the classification of handicapped and/or socially low functioning students and (b) correlates in predictable ways and to a significant degree with constructs such as self-control, aggression, isolation, and hyperactivity-inattention.

The MESSY or Matson Evaluation of Social Skills with Youngsters is a 92-item self-report rating scale developed by Matson and described in Matson, Esveldt-Dawson, and Kazdin (1983). This scale was designed to assess a broad range of social behavior such as appropriate social interaction, negative social interaction, expression of hostility, social isolation, and conversation skills. Matson et al. (1983) reported the MESSY was not correlated significantly with children's performances on a behavioral role play, sociometric status, teacher ratings of social skills or global ratings of social adjustment. The scale, however, was reported to be correlated ($\underline{r}$ = .27) with a structured child interview. In sum, the published psychometric evidence concerning the MESSY suggests, in its present form, does not add meaningfully to the assessment of children's social behavior.

Behavioral role plays. Having children enact social behaviors in a controlled and structured environment should provide assessors meaningful information on a wide range of behaviors. Thus, it has been argued that behavioral role plays (BRPs) should be the primary method by which social skills are assessed (Bellack, 1979) and that BRPs have important advantages over other methods of social skills assessment. For example, BRPs provide opportunities for direct observation of behaviors rather than ratings or summary perceptions and BRPs can be used to assess social behaviors that occur at low frequencies in natural setting. BRPs also can be constructed to replicate difficult to access environments and generally afford more efficient data collection. For example, see the Social Skills Role-Play Test developed by Michelson et al. (1983).

Unfortunately, there are some shortcomings to using BRPs (Gresham, 1983; Van Hasselt, Hersen, & Bellack, 1981). The most serious ones concern the lack of predictive validity of role play performances to naturalistic social behaviors and sociometric status. This finding should not surprise us given what is known about the situation specificity of many social behaviors (Mischel, 1968). Gresham and Reschly (1988) also noted the predictive validity limitations of BRPS, but suggested that BRPs still are useful in discriminating social skill from social performance deficits. Thus, role play measures are more accurately considered diagnostic measures of social skill difficulty than screening or treatment planning measures.

Observations. Direct observations of children's social behavior frequently have been used as concurrent validity data and/or as outcome measures in social skills training research (Asher & Hymel, 1981; Elliott, Gresham, Freeman, & McCloskey, 1988; Gresham, 1981) and have a long history in research documenting the developmental parameters of children's peer interactions (e.g., Masters & Furman, 1981). Several observation systems for social behaviors have become prevalent in the research literature. For example, the Observational System for Coding Reinforcing, Neutral and Punishing Interactions Among Children (Furman & Masters, 1980), the PEERS Consultant Observation Interaction Code (Hops et al., 1978), and the Social Skills Observation Checklist (Michelson, Sugai, Wood, & Kazdin (1983). A detailed review of these systems of assessment is beyond the scope of this paper, suffice it to say that all these systems acknowledge the complexities of social interactions and allow coding on basic dimensions of behavior such as verbal-nonverbal and initiating-responding as well as more subjective aspects concerning the consequence (i.e., reinforcing, neutral, or punishing) of behaviors.

Direct, naturalistic observations of children's social behavior are considered to be the most face valid assessment of social skills. Ratings and rankings by others and role plays are indirect assessments of behavior and generally do not have the virtue of repeated measures that is true of direct observations. Despite some salient advantages, direct observations are relatively costly to collect and many of the observation categories do not provide sufficient information regarding social skill difficulties, nor normative levels of behavior (La Greca & Stark, 1986). In addition, observations of any behavior are subject to observer drift and bias which threaten the accuracy of observational data. On balance, direct observations of children's social behavior, although not without some shortcomings, seems to be a meaningful adjunct to other assessment methods. Perhaps the most frequent product from an observational assessment of social behavior is rate of interaction data. The value and meaning of rate of interaction data recently has been questioned (see Asher, Markell, & Hymel, 1981 for a detailed review) and deserves some attention.

The use of rate of interaction as a major dependent variable in social skills research stems from the belief that low-interacting individuals miss out on many early and important social experiences that are critical to normal interpersonal development. As LaGreca and Stark (1986, p. 184) noted, however, rate of interaction has not been validated "as an index of social maladjustment nor as a predictor of later life difficulties." Although easy to collect and certainly a covariate with social skills, data on preschoolers and elementary students provide little support for a strong, predictable relationship between a child's rate of interaction and level of social competence (Foster & Ritchy, 1983; Hymel, Tinsley, Geraci, & Asher, 1981). Clearly, researchers need to continue to collect data on rate of social interactions, however, information is also needed that attests to the quality and consequences of interactions.

Behavioral interviews. Gresham (1983; Gresham & Reschly, 1988) advocates the use of behavioral interviews as part of a comprehensive social skills assessment strategy because interviews can facilitate a functional analysis of behavior. In addition, behavioral interviews have been shown to be reliable and valid methods for identifying target behaviors and effective treatment strategies for misbehaving children (Gresham, 1983). Yet, no researchers have reported using behavioral interviews as part of an assessment of children's social skills. Researchers and practitioners interested in building stronger conceptual and pragmatic links between their assessments and interventions are encouraged to consider the use of behavioral interviews as supplements to already established methods of assessment.

Summary

In sum, to increase the likelihood of accurate identification or classification decisions concerning social skills deficits, I recommend the use of direct observations of the target child and nontarget peers in multiple settings; behavioral interviews with both referral source and child; rating scale data, preferably norm-referenced data, on both a social skills scale and a problem behavior scale completed by a referral source and possibly the target child; and sociometric data from the target child's classmates. With regard to intervention decisions, data contributing to a functional analysis of important social behaviors is imperative. This type of data usually results from multiple direct observations across settings; behavioral role plays with the target child; teacher and parent ratings of socially valid molecular behaviors; and behavioral interviews with the treatment agent(s), particularly if individuals other than the assessor will be involved in delivering the treatment, to assess the treatment setting and the acceptability of the final treatment plan.

Assessment and Measurement Challenges Ahead

As evidenced by the array of assessment methods reviewed in the previous sections, individuals interested in evaluating children's social behavior and discrete social skills will be confronted with some significant conceptual and technical challenges. Many of the challenges will never go away. A comprehensive assessment of social behavior, regardless of instrumentation, will always require multiple measurements over time, across situations, tasks, and contexts. As Guralnick (1986) reminded us, sound conceptual frameworks for the assessment and treatment of social skills has only recently been offered. As these conceptual frameworks (such as Guralnick's episode model or Gresham's DATE model) are assimilated into research and practice, I am optimistic that the state of the art of assessing children's social skills will improve. However, challenges in the measurement and interpretative arenas will persist. These challenges include (a) the lack of normative information on the development and use of discrete social skills, (b) the synthesis and interpretation of multirater data on social skills and interfering behaviors, (c) the expansion of social skills assessments to include variables such as self-efficacy, physical attractiveness and abilities, and language skills, (d) the refinement of sociometric methods so that they are easily scored and more acceptable to educators, and (e) the development of techniques to establish the social validity of the assessment procedures and outcomes. Advances are being registered with regard to each of these five challenges. Researchers such as Ledingham (1985) are advancing knowledge of the influence the evaluator (rater) has on the assessments of social skills. Her work, coupled with that of Achenbach and associates (1987) has provided insights into the interpretation of multirater data. The development of several new norm-referenced rating scales (e.g., Gresham & Elliott, in preparation; Walker & McConnell, 1988) has the potential to advance our knowledge of the development of specific social skills over time for diverse samples of children and youth. Finally, the conceptual work of Wolf (1978) and practical work by Walker and Rankin (1983) have advanced the importance of social validation and provided structure to its measurement. Thus, researchers and practitioners alike who have an interest in children's social skills have much to ponder, and yet much to work with given the existing knowledge base.

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Table 1.

10 Most Important Social Skills and 10 Least Important Social Skills as Rated by Classroom Teachers on the Social Skills Rating Scales

TOP 10: SSRS RATINGS ON IMPORTANCE DIMENSION

1. Completes classroom assignments in required time.

2. Looks at teacher when instructed.

3. Follows teacher's verbal directions.

4. Requests assistance, explanations, or instructions from teacher.

5. Uses time productively while waiting for teacher assistance.

6. Asks questions of teacher when unsure of what to do in school work at appropriate times and in an appropriate manner.

7. Produces correct academic work.

8. Controls temper in conflict situations.

9. Attends to class speakers.

10. Ignores peer distractions when doing class work.

THE BOTTOM 10: SSRS RATINGS ON IMPORTANCE DIMENSION

1. Invites peers to play.

2. Introduces self to new people on own initiative.

3. Praises peers.

4. Makes positive statements to other children.

5. Presents academic work before class.

6. Cooperates with peers without being told.

7. Appropriately expresses opinions or beliefs on some issue by giving reasons for expressed opinion or belief.

8. Appropriately expresses anger or annoyance when a classmate takes a belonging without asking.

9. Attempts classroom tasks before asking for teacher assistance.

10. Tolerates peers whose characteristics are different from one's own (e.g., ethnic group, handicapped, etc.).

Table 2.

Interfering Responses Under the Cognitive-Verbal, Overt-Motoric, and Physiological-Emotional Response Modes

COGNITIVE-VERBAL

- Depression
- Anger
- Impulsivity
- Anxiety

OVERT-MOTORIC

- Disruptive Behavior
- Aggressive Behavior
- Excessive Motor Movement

PHYSIOLOGICAL-EMOTIONAL

- Anxiety
- Anger
- Depression

Figure 9.1. Conceptual classification system for children's social skill problems. (Emotional arousal responses can be anxiety, fear, anger, or impulsivity that interfere with the acquisition or performance of appropriate social behaviors.)

	Learning Deficit	Performance Deficit
Emotional Arousal Response Absent	Social Skills Deficit	Social Performance Deficit
Emotional Arousal Response Present	Self-Control Skills Deficit	Self-Control Performance Deficit

[1] Emotional arousal responses are internal responses such as anxiety, impulsivity, anger, etc., that prevent either the acquisition or performance of appropriate social behaviors.

Getting to Special Education:
Local Constraints on Global Procedures

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Running head: GETTING TO SPECIAL EDUCATION

Abstract

Ethnographic study found that staff members in an elementary school interpreted school district policy for placing students in special education according to an informal rule of early referral. This rule respected special education's emphasis on early identification, but it also reflected teachers' patterned beliefs about the function and the efficacy of special education. Primary teachers referred many students, but upper grade teachers rarely referred, even though events showed that not all qualifying students were being placed in a special education program. Reasons for referring or not referring included contrasts in the regular education curriculum at the primary and upper grades. This study suggests that plans to change global administrative relationships between regular and special education globally will need to consider social patterns at the school level.

Getting to Special Education:
Local Constraints on Global Procedures

In the context of proposals to merge special and regular education, some familiar issues take on new importance. One of these is the current relationship between regular and special education. How do schools presently weave together the two educational strands? A second, related issue is the nature of the link between formal special education policy and conventions at the local level for enacting it. If policy and practice are not welded, will changing policy affect children?

Both issues are illuminated in the referral process by which a school transforms a regular education student into a special education student. Players in that process--school districts, assessment teams, parents, and classroom teachers--demonstrate their understandings of the posture that their school takes toward children who are exceptional in the context of school. Given their multiple roles in educational structures and tasks, it is not surprising that enacting the referral process sometimes reveals actors' contrasting perspectives on exceptionality and special education. Contrasts are particularly apparent early in the process where regular education teachers nominate students as possible special education candidates. This is a crucial point: Classroom teacher referral is the strongest predictor of placement in special education (Ysseldyke, et al., 1983). No matter how specific the official criteria for making referral decisions or how complex the prereferral activities, the decision to refer a student rests ultimately with the classroom teacher. Understanding the relationship between regular and special education requires understanding how regular education teachers decide which of their students to refer.

Contrasting perspectives on referral have been manifested in research as well. Teachers' referrals have been compared to objective placement criteria which assume that handicaps inhere in children (e.g., Shepard, Smith, & Vojir, 1983; Ysseldyke, Christenson, Pianta, Thurlow, & Algozzine, 1982). Alternatively, Gerber & Semmel (1984) have suggested that referrals result from interactions between students and teachers, and that deviations from placement criteria ought to be seen not as error but as attributable to aspects of teachers' multiple roles. Mehan, Hertweck, and Meihls (1986) found that educational handicap is as much a "consequence of institutional practice" (p.159) as an attribute of students. That is, a student's identity as handicapped does not derive from his/her competence and school performance; instead, that identity is constructed in the work that teachers and administrators do in enacting special education procedures.

When referral is considered not as a matching task between students and placement criteria but as an institutional accomplishment, what is of interest is the interaction in which staff members in a school work together to find a student handicapped or not. If referral is indeed an institutional accomplishment, that interaction should reveal the outlines of the institution's culture. There should be evidence that staff members are responding to something more than actions and attributes of students, and that they are doing so in concert with one another, according to shared principles and beliefs about the nature of their world. Identifying such "conventions of group life" (Agar, 1985, p. 16) which underlie the practice of referral requires an interpretive qualitative research method. In this approach, researchers participate in community life in order to discover the meanings that events hold for members of the group (Adger, 1986; Erickson, 1986).

This article describes such a study into the practice of referral in one elementary school. It shows that classroom teachers' referrals were governed by shared beliefs about student exceptionality within the context of the work of the whole school, and by teachers' perceptions of their particular responsibility in this regard.

The Study's Roots

Evidence of referral as a social phenomenon comes from our "ethnographic probe" (Gearing & Epstein, 1982, p. 243) of enacted referral in a culturally diverse elementary school. This study was undertaken to inform development of a computer-based expert system that assists staff members at culturally diverse schools in analyzing teaching/learning problems and modifying mainstream classroom instruction for children at risk (Adger, Haynes, & Dreifuss, 1988; Haynes, 1985). During this applied research, some interesting findings emerged which have implications for policy. Following a brief description of how the study was conducted, we describe classroom teachers' informal rules for referring children to the instructional management team for possible placement in special programs.

Ethnographic Study at Louise Hills

Two researchers studied referral practices at Louise Hills Elementary School for one semester. To learn how referrals arose, we asked the 14 classroom teachers to identify students who seemed to be particularly at risk for school failure. The 29 students whom they listed were regarded as having serious trouble with some aspect of their school work (usually reading) or with behavior. Looking for evidence of the teaching/learning problems that teachers had described, we observed these students repeatedly as they participated in classroom life. Our observations centered on these students' actions, contextualized by lesson(s) in progress, teachers' and other students' actions, school and classroom events that might be relevant (e.g. public address announcements and holiday parties), and other factors (e.g., the weather, the time of day, and events outside of school). We also observed these students in other school settings. At issue was how these students, in contrast to their classmates, were demonstrating their at-risk status.

Field work included interviews and conversations with teachers about the instructional strategies they had tried with these students, and their use of the school's resources, including the referral system, to try to help them. We asked the six teachers who conducted pull-out programs (reading, speech/language therapy, Chapter I, ESOL, and special education), and the principal about the students. We attended instructional management team meetings in which teachers discussed students' performance and decided whether to recommend special education assessment or to try placing them in some special program. We examined school records for a historical perspective on what we were seeing and hearing.

In conversations about their at-risk students, staff members expressed beliefs about special education, Louise Hills' special education referral system, and their relationship to it. For another perspective, we examined the referral team's records for the year. By charting names, referral dates, team decisions, and student placements, and then checking referrals and placements in students' records, we mapped referral activities for the school year. Analysis revealed referring patterns within the school.

Analytic techniques included coding the field notes, using categories derived from the initial research questions and others which arose during data collection and preliminary analysis. Sorting the notes to identify patterns, using ZyIndex (ZyLab Corporation), allowed us to confirm, disconfirm, and modify our earlier understandings.

Referral Patterns at Louise Hills

The social setting.

Located in a mostly working and lower middle class neighborhood between a large city and its more affluent suburbs, Louise Hills Elementary School served many minority students (383 out of 440, 87%). Accurate documentation of cultural diversity was not available. Because details of students' cultural and ethnolinguistic backgrounds became salient only in the context of English nonfluency and school failure, data were not available for students who were fluent in English or fairly fluent, and academically successful or at least getting by. However, many students did not have the "cultural capital" (Mehan, Hertweck, & Meihls, 1986) necessary for school success, and teachers found the job at Louise Hills difficult. Ms. Duke, the principal, pointed out that an unusually large number of specialists were assigned to Louise Hills to help meet the challenge presented by a culturally and linguistically diverse student population.

A student's first step toward special education was referral to the school's instructional management team, composed of Ms. Duke, the referring teacher for each case, and all of the school's specialists, including the special education teacher but not the ESOL teacher. The team discussed the students' performance and what was known about their homes and their backgrounds, and decided what steps should be taken to help the students and their teachers. Twenty-nine percent of those referred (20/69) that year were recommended for special education evaluation by the multidisciplinary team. For the others, instructional arrangements were modified--formally, if test scores warranted, informally if they did not--by placement in a

Chapter I class (13%), ESOL (19%), or the speech/language program (11%). Working with the reading teacher was recommended for one child, and meeting with the guidance counsellor, for seven others. The team also decided who would be retained (12% of the children referred that year). The school district's Special Education Guidelines defined the team as also responsible for suggesting instructional modifications in the mainstream classroom, but the Louise Hills team did little in this regard. In essence, the team served as gatekeeper for special programs.

The Guidelines dictated that students who were having "significant problems" with their school work were to be referred to their school's instructional management team, which would refer those suspected of having handicaps to the special education team. If those rules alone had been driving referral, all of the 29 research subjects would have been referred at some point in their school careers since these were the students considered most at risk for school failure. This was not the case. Not all of these students had been referred nor were they all enrolled in a special program.

Early referral policies. Analysis showed that teachers' referral decisions were guided by local considerations that constrained the application of official policy in patterned ways. In deciding to refer a student, classroom teachers followed an informal, local rule of early referral. Evidence of this rule's application during the year of study appears in Table 1, which was assembled from instructional management team records, field notes, and students' records. Teacher referrals to the team generally fell off across the grades.

Insert Table 1 about here.

The kindergarten teacher placed one quarter of her students on the instructional management team's agenda. (Eleven other students entered the referral system as a result of screening procedures). Grade by grade, teachers generally referred a smaller proportion of their students. Only three percent of the sixth grade students were referred.

The explanation for this diminishing pattern is complex. It was due in part to official emphasis at the school district level on early identification of children at risk. Because educational handicap is considered to be a feature of some children, all kindergartners entering district schools were screened in the fall to find those with disability. During the year of the study, eighteen per cent (11/61) of them entered the referral system automatically as a result of the screening.

The teacher referral pattern seemed at first to be the straightforward result of that official early identification policy. The early screening program--together with referrals of more children by the kindergarten teacher, who said that she was especially sensitive to exceptional performance because of her part in the screening program--would be expected to find very young students who appeared to be performing outside the normal range of achievement so that they could receive special instruction. At each succeeding grade, fewer and fewer children at risk would remain unidentified. Children transferring into the school would have been screened at their previous schools. Referrals in upper grades might be immigrant children and children who had been performing at the margin.

The referral pattern documented in Table 1 was not completely explained by the official early identification policy. One piece of evidence is a discrepant case in Table 1: referrals by the Chapter I teacher. This case stands out because throughout the school, referral was considered the prerogative and responsibility of classroom teachers, not of specialists. (The school's conventions contrast with the school system's. The Special Education Guidelines specify that any teacher may refer a student.) In the primary grades, classroom teachers did nearly all of the referring that did not come about automatically as a result of screening. In grade five, however, the Chapter I teacher, made more referrals than did the two classroom teachers.

The Chapter I teacher's referrals came about after she had failed to convince three classroom teachers to refer some of their students who were not succeeding in the Chapter I math and reading classes. The teacher, Mrs. Pollock, suspected that their difficulties might be due to disability; and she wanted to have them tested, a step which required referral to the instructional management team. Mrs. Pollock pressed the teachers when they demurred. Finally, she referred the students herself, in spite of raising the classroom teachers' ire. The instructional management team, on which she sat, recommended special education assessment for all of them, and half (six students) were eventually placed in special education.

This case shows that Louise Hills' early referral pattern is more than the predictable result of the school district's policy. Upper grade teachers had refused to refer some students who were later shown to have been appropriate candidates for referral. These teachers had actively not referred: The rule of early referral was revealed to have a corollary proscribing late referral. The school's rule might better be called the early-referral-only rule. Finally, the discrepant case suggests that there was tension between the official referral policy, which Mrs. Pollock followed when she referred children whose school problems seemed significant, and the local rule of early referral which the teachers followed.

Early Referral and Curriculum.

The school's diminishing referral pattern, which official guidelines might predict, was better explained by classroom teachers' beliefs concerning the value of special education and other pull-out programs. In essence, beliefs that special education and other special programs were efficacious fell off across the grades, along with referral for possible placement in these programs.

Staff members at Louise Hills made clear to us in various ways that special education and other special programs were the province of the primary grades. Primary teachers welcomed research related to special education; upper grade teachers did not. Teachers in the early grades were curious about expert system support for understanding students' school difficulties and choosing appropriate instructional strategies. They invited us into their classrooms, suggesting where to look for evidence of students' exceptionality and asking what we had noticed in our closely focused observations of their students. They talked to us about their at-risk students with feeling, telling stories about them, and showing us their work. Some teachers asked us to work with these students; some arranged for us to observe them in other teachers' classes. They reminded their students to bring back parental consent forms so that we could examine school records. Generally, the primary teachers facilitated our access to the life of the school.

By contrast, the upper grade teachers were cool--hesitant or unwilling to have us observe their students very often, sometimes guarded in interviews, not volunteering to tell more than was asked. One fourth grade teacher would not point out the student whom Ms. Duke and two specialists had said was at particular risk, a boy who would shortly be placed in a self-contained special education class at another school. "He's been observed enough," she said. Neither sixth grade teacher agreed to have us observe their students in the classroom. Eventually, the upper grade teachers warmed toward us personally, although they never matched the primary teachers for interest in research linked to special education. Only Mrs. Pollock, who taught the upper grade students in the Chapter I pullout program, sought us out to talk about her students, referral, and special programs at Louise Hills.

Interviews shed light on the antipathy of the upper grade teachers. Talking privately in their classrooms after school, and chatting in the halls, all seven upper grade teachers said, essentially, that they had little confidence in the value of Louise Hills' special programs for their students. Students who had been going to special education and other special programs for years were still having trouble in their mainstream classrooms, still not working near grade level. As a result, the downside of special programs was foregrounded. The "constant coming and going" of their students to pullout programs constrained the teachers' freedom to modify their schedules, interrupted their lessons, distracted their students, and fragmented their curricula. In various ways, the upper grade teachers echoed a sixth grade teacher's assertion that he would rather not have any students leave his classroom: "Leave me alone," he wanted to say to the purveyors of special programs, "Let me teach my thirty kids myself and lock my door."

Mrs. Graves, a fifth grade teacher, had refused to refer any of her ten students whom Mrs. Pollock thought might have disabilities, because Mrs. Graves did not believe that special education would help them any more than Mrs. Pollock's Chapter I program did. Some of her students had complained that going to special eduction made them miss classroom instruction. Mrs. Graves thought that her time would be spent more economically by doing her best job of teaching, than by referring her students--an action likely to end in still more of her students leaving the room for special programs. If some moved from Mrs. Pollock's class to special education resource, there would be more room in the Chapter I class for other fifth graders.

Primary teachers, on the other hand, raved about special programs, in particular Mrs. Snow's Chapter I program which served more of their students than did special education. Mrs. Snow worked closely with the first, second, and third grade teachers to coordinate her math and reading instruction with theirs. Two first grade teachers who traded students to create homogeneous reading and math groups relied on Mrs. Snow to help students who could not keep pace with mainstream classroom groups. One or the other dropped by Mrs. Snow's room almost every day after school to discuss which students needed work on what skills. Other teachers conferred with her less often, but every primary teacher spoke with gratitude and satisfaction about sending students to Mrs. Snow.

Curriculum contrasts. The key to contrasts between primary and upper grade teachers' respect for special programs--hence their enthusiasm for referring students for possible special placement--lay in curriculum contrasts. Within an institution largely organized around reading instruction and reading groups, upper and lower grade teachers had different instructional goals with respect to literacy. "Our priority is reading and math," explained a first grade teacher in talking about how she and her colleague used their instructional time. To herd their students through the district's basal reading series, they added extra reading lessons whenever schedules permitted and pressed the specialists to work with their students informally when official placement was not justified--especially with language minority children. Although other teachers complained that the reading teacher was ineffective, the first grade teachers sent students to work with her regularly, students like Lucia, a child of Portuguese background who often seemed to be distracted and not focused on lessons. Unsure of whether it was limited English proficiency or emotional stress linked to family problems that kept Lucia from learning, but determined to help her, her teacher sent her to the reading teacher every day, remarking that, "At least she gets individual attention there." In the middle of the year, she referred Lucia, in hopes that some additional special placement might help. Special programs were safety nets for primary teachers, who struggled to teach math and, especially, reading to minority children: Special programs could catch students for whom instructional arrangements in mainstream classrooms were not successful.

At the upper grades, the curriculum did not center on acquiring literacy. With the shift toward reading as an instrument of learning rather than a goal, basic literacy skills were presupposed. Classrooms quieted and lessons lasted longer.

In this climate, special education and other programs--still teaching basic skills to non-modal students who had not mastered them--were out of step with the curriculum which the mainstream classroom teachers had to deliver. Specialists took students out of class for instruction that was not relevant to the regular curriculum, at times that were not convenient. Specialists picking up their students for basic skills instruction were interrupting the work of the mainstream classroom, not extending it. (If instead of collecting their students personally, special program teachers relied on classroom teachers to send students at designated times, students often did not appear.)

Two metaphors used frequently in conversations at Louise Hills encapsulate functional differences between primary grades and upper grades which fed the early referral phenomenon: screening in the primary grades, and molding in the upper grades. For the primary grades, teachers, specialists, and other instructional management team members worked cooperatively, sorting and placing students in learning groups and special programs, trying to determine where they "belonged" in the school's array of instructional offerings. While the term screening referred to official programs and activities like testing and discussing a student at an instructional management team meeting, other work related to the screening mission went on constantly as teachers monitored their students' work, modified their assignments, and conferred with each other. When the fit between student and program was uncertain or not officially validated, the screeners sometimes created pragmatic placements -- which Ms. Duke called "cheating" and "bending the rules". Screening and placing required cooperation, or collusion, among the receiving specialist, the sending teacher, and instructional management team members to find the best fit between student and learning environment. Referral promoted screening: it convened the instructional management team for that very purpose.

Elasticity gave way to structure in the upper grades, screening to molding. "We run a tight ship," said a fourth grade teacher of her own and her cooperating teacher's highly structured classrooms. Ms. Duke described the two sixth grade teachers as fitting children into "the sixth grade mold". Like screening, molding required that teachers cooperate and occasionally collude, but the goal was very different. Molding served to streamline instructional arrangements so that the mainstream classroom could operate smoothly, not to promote placements outside it. For example, the sixth grade classroom teachers, who exchanged students for reading and math, arranged for the special education teacher to pull out an entire reading group at the time when their students changed rooms, instead of just those students placed officially in special education. Referral to the instructional management team was extraneous to molding; in fact, it promoted fragmentation. A fourth grade teacher said she went to the team "out of desperation," not the camaraderie of a shared task.

In summary, heavy referral in the early grades at Louise Hills was more than the predictable result of the school district's policy. Something more than spotting possibly disabled children governed teachers' decisions. The referral pattern was a natural consequence of classroom teachers' differential understandings of their responsibility to their students within the framework of the district's curriculum and instructional arrangements for delivering it at Louise Hills.

Implications from social structure

The fact that referral was socially structured in the school has implications for research and for policy. First, it supports the contention of Mehan et al. (1986) that "the place to look for educational handicaps is in the institutional arrangements of the school and not in the characteristics of individual children" (p. 56). No single explanation for referral at Louise Hills is complete. Aspects of students' performance played a role, as did teachers' styles. Considering teachers' referrals as events in the life of Louise Hills Elementary School, rather than in the school history of the referred student, showed that referring was at least in part a socially structured phenomenon. The act of referring was governed not by the school district's formal procedures alone, but also by informal rules which classroom teachers shared. These rules were unwritten but not unspoken. Additional local considerations motivated referrals, as other research has shown (e.g., Mehan et al., 1986; Smith, 1982; Lazarus, 1987). Like the rule of early referral, these considerations derived from teachers' responsibilities toward their students (Adger et al., 1986).

A second implication concerns the relationship of special education policy and practice as that is contextualized by the work that schools do. It is important, in the context of special education reform proposals and continuing questions about equity and special education (Gartner & Lipsky, 1987), to understand current special education practice at the local level, and to discover how it is nested within school districts' global rules for delivering special education. This relationship has been variously characterized. Administrators in Louise Hills' school district regarded variation from district procedure as either unconstrained error or capricious deviation. From an organizational theory perspective, Skrtic (1987) has suggested that "the formal . . . bureaucratic structure that schools are compelled to adopt is disconnected from or has little to do with the way their work is actually done." Incompatible with the work that schools must do in assessing students, formal rules are ignored. Formal and informal structures are uncoupled.

Another metaphor is more apt for the referral process at Louise Hills: there the formal and the informal were interwoven in a tapestry (Maugham, 1915), its pattern derived from their combination. Vagueness in the school district's Special Education Guidelines, which called for classroom teachers to refer "students who appear to have significant problems," invited teachers to enter into placement negotiations by proposing candidates for special education. The school's informal rule of early referral guided staff members in specifying the vague guidelines, in making sense of them in terms of the school's work. The staff took care not to over-apply informal rules--to bend the official rules, not to break them. Agents of the formal rules--members of the multidisciplinary team from outside the school--would check the school's decisions by accepting or rejecting the referred students for special education. If formal rules were found to have been broken, then multidisciplinary team members inside the school could be considered responsible, since they also belonged to the instructional management team.

Practical Implications

Finally, the patterns reported here may have implications for changing the relationship between regular and special education. If children with special needs are educated entirely in the mainstream classroom, requirements will increase for the classroom teacher and the special education teacher to work in tandem. At Louise Hills, the present relationship between the primary teachers and the special programs teachers seems well suited to increased teaming in the mainstream setting. But in the upper grades, where the regular and special education programs are partitioned by well established conventions and the contrasting curricular emphases which undergird them, significant social changes will have to accompany changes in formal policy.

The yellow light is on in the race toward merger of regular and special education (Fuchs & Fuchs, 1988). There is opportunity and motivation to inquire further into enacted relationships in schools among programs, policies, and the processes by which they are accomplished.

Table 1
Source of Referrals to School Instructional Team

			referral source				
grade	number of students referred	proportion of class referred by classroom teachers	classroom teacher	chapter one teacher	unkown	follow up from previous year	kinder-garten testing
K	25	23%	14				11
1	10	13%	8		1	1	
2	6	9%	6				
3	4	4%	3	1			
4	8	8%	5	1		2	
5	14	2%	2	10	1	1	
6	2	3%	2				

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DIGEST

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Changes in American Indian Education:

A Historical Retrospective for Educators in the United States

Digest EDO-RC-89-1

THE BRIEF RETROSPECTIVE in this Digest should interest all American educators concerned with such enduring issues as equity and equality of educational opportunity, local autonomy, community involvement, curriculum development, and the relationship of cultural values to the way schooling is conducted in general. American Indian educators face challenges and are devising solutions to unique cultural and pedagogical problems. The discussion that follows aims to help all educators become more knowledgeable about the contributions of and circumstances surrounding the education of American Indians.

Historical overview

Schooling as a formal institution for Indians started with missionaries, and teachers in missionary schools were at least as interested in salvation as in education. According to many observers, the regimen of the schools usually included getting Indians to dress, speak, and act like white people (see for example, Whiteman, 1986).

Church-operated schools, of course, were also common for white people during the early years of the United States. Whereas many of these church schools were replaced in the nineteenth century by locally-funded and locally-controlled public schools, mission schools for American Indian students were largely replaced by schools operated by the Bureau of Indian Affairs (BIA). These schools were administered directly from the nation's capital. At that time Indians were not U.S. citizens, and they lacked the right to control their own lives and the education of their children (Eder & Reyhner, 1988; Whiteman, 1986).

Indian Commissioner Thomas J. Morgan wrote in 1889 that "the Indians must conform 'to the white man's ways,' peaceably if they will, forcibly if they must." Many Indians began their education at this time in boarding schools, often far from home, where they had their hair cut, where their native clothes were replaced, and where they were often punished for speaking their own languages (Whiteman, 1986).

Official government policy encouraged detribalizing Indians partly through education and partly through allotting Indian communal lands (Eder & Reyhner, 1988; Whiteman, 1986). Moreover, many citizens regarded Indians as "Vanishing Americans," and it was commonplace for newspapers to advocate the virtual extermination of American Indians (Murphy & Murphy, 1989).

Such policies and attitudes did not reflect the needs of Indian people, as more and more non-Indians began to realize in the early twentieth century (for example, Meriam, 1928).

After the First World War Indians received citizenship, and during the New Deal tribes assumed greater responsibility for their own governance, more Indian heritage was taught in BIA schools, and some boarding schools were replaced by local day schools.

From a population low of about 237,000 in 1900, the American Indian population grew to 1.5 million in 1980, and increasing numbers of Indian children began to attend public schools. Today two-thirds of all Indian children who live on reservations attend public schools (Eder & Reyhner, 1988).

Civil rights and self-determination

After the Second World War, along with Blacks and other minorities, American Indians began actively to promote self-determination and their own civil rights generally. This development has affected Indian education profoundly. The 1972 Indian Education Act funded supplementary programs to help American Indian students both on and off reservations. In so doing, it recognized that 50% of all Indians lived in urban areas and 75% lived off reservations.

President Nixon in his 1970 message to Congress declared a new era of Indian self-determination, and in 1975 Congress passed the Indian Self-Determination and Education Assistance Act.

Today, 56 community-controlled schools operate under contract from the BIA. In addition, 20 tribally-controlled community colleges have been started. The 103 elementary and secondary schools still operated directly by the BIA now have local Indian school boards with a voice in the operation of the school, including the selection of staff.

Indian curriculum

Locally controlled, BIA-operated, and public schools have all sought to hire more Indian teachers and administrators and to engage in local curriculum development. A few schools now provide initial reading instruction in tribal languages. Many teach English as a second language, and most schools that serve Indian children teach some tribal history and culture. Like other schools, these schools also teach English and basic skills .

The Indian Education Act of 1972, together with federal bilingual programs, which became available to Indian schools in 1978, have helped this process, though some observers believe their supplementary nature sometimes makes it difficult to integrate Indian language and culture into the regular school curriculum.

Educators are also searching for ways to improve the poor student achievement that has been documented in all the major studies of Indian education (for example, Fuchs & Havighurst, 1972/1983; Meriam, 1928). Gilliland (1986) lists eight sociocultural factors as potentially responsible for the poor academic achievement of Indian students:

- differences between native culture and school culture,
- ignorance of native culture among school staff,
- differences between students' and teachers' values,
- differences in native students' learning styles,
- poor motivation of Indian students,

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- language differences of students and teachers,
- students' home and community problems, and
- inappropriate use of tests with Indian students.

School improvement efforts in Indian schools entail two approaches. One approach applies school effectiveness findings, based largely on urban and suburban studies carried out in schools serving the dominant culture. Another approach focuses on getting students to read more "real literature" and getting them to write more. Most of the experimentation in Indian schools applies the second approach, known loosely as the "whole language approach." This approach has a varied ancestry, with roots in progressive education, the open classroom movement, and in language experience techniques.

For the primary grades, the ERIC/CRESS publication *Just Beyond Your Fingertips: American Indian Children Participating in Language Development* (Boloz, Hickman, & Loughrin, 1987) is a good example of a whole language approach based on English texts and activities.

The amount of American Indian literature that can be integrated into language arts, social studies, and other subjects continues to grow steadily (Stensland, 1979). Nonetheless, some observers view the typical use of commercial textbooks in American schools as an impediment to the integration of American Indian studies in the curriculum of Indian schools. Coordinated nationwide effort to produce curriculum for Indian students does not exist.

Teacher training

Fuchs and Havighurst (1972/1983) found that teachers of Indian children needed systematic training to help them take account of the sociocultural processes operating in Indian communities and classrooms. Current research on cultural learning styles (for example, Rhodes, 1989; Swisher & Deyle, 1987) confirms the importance of this suggestion. This research demonstrates, for example, that American Indians respond well to cooperative learning and peer tutoring. Indian community leaders also favor teaching students about their tribal culture (Fuchs & Havighurst, 1972/1983). Hence, teachers should learn about American Indians in general and particularly about the tribe within which they will teach.

Such recommendations highlight the importance of recruiting teachers from among members of the Indian community. It is usually easier to teach a tribal member the standard teacher training than it is to teach an outsider the tribal language and culture (Eder & Reyhner, 1988). Standardized tests recently required for entrance to and exit from teacher training programs, however, make it increasingly difficult for American Indians and other minorities to obtain teacher certification.

Tribal policies

In the past few years tribal councils pursuing self-determination have been expanding their roles and adopting educational policies. These policies have tended to express a strong commitment to educational excellence and tribal languages and cultures. For example, the Navajo tribal educational policies of 1985 declared that the Navajo language was an essential element of the life, culture, and identify of the tribe and mandated school instruction in both Navajo and English.

Looking to the future

The challenge to develop appropriate instructional methods and materials for American Indian students will doubtless continue to occupy educators' attention in the coming years. Schools with American Indian children need more teachers and administrators who understand Indian communities, especially their cultural and linguistic background. Fewer than twenty years, however, have past since President Nixon endorsed a federal policy of self-determination for American Indians, and much remains to be done.

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Trends in American Indian Education

Mann

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INTRODUCTION

The study of American Indian and Alaska Native education has been the interest of many writers since formal European education was introduced in the United States over 200 years ago. There are documents that describe these early educational efforts, and they present an ever-changing perspective of the techniques, needs, and goals in educating the native population. Christianity and "civilizing" the native were early goals. This gave way to making the American Indian a farmer who would be a counterpart of the developing American populace. When the responsibility for educating American Indians was assumed by the United States government, educating Indians became agriculturally-vocationally-technically oriented. The Bureau of Indian Affairs was given the responsibility of providing this education and did so in a paternalistic manner that fostered dependence of Indians on the U.S. government.

The Meriam Report (1928), entitled The Problem of Indian Administration, comprehensively analyzed the Indian problem for the first time and offered recommendations that would enable and enhance the American Indians' participation in 20th century America. The Meriam Report recommended that Indians participate in determining their own education policy, Indian students attend school close to their home areas, Indian cultures be included in the curriculum, and appropriations be increased to implement these and other recommendations. Unfortunately, the report's recommendations were virtually ignored by the United States government, and its paternalistic provision of education to Indian people was continued.

The Civil Rights Movement of the 1960s brought the Indian plight to the forefront of the United States government's attention. It was made acutely aware of its treatment of tribal governments and Indian people. Tribal leaders and members demanded more input and self-direction in policy development and implementation of federal policies that affected them. In 1968, Senator Robert Kennedy initiated a study on Indian affairs and issued a report, "Indian Education: A National Tragedy--A National Challenge." The Kennedy Report reflected recommendations similar to those of the Meriam Report 40 years earlier. As a result, a landmark bill was developed which addressed many Indian educational needs, such as Indian participation and control of education affecting them, supplemental funds to public schools that Indian children attend to meet the ". . . special educational needs of Indian students," higher education fellowships, discretionary grants to tribes to meet tribally identified needs, funds for adult education programs, and provisions for a National Advisory Council on Indian Education. This bill became the Indian Education Act (IEA) of 1972.

Implementation of the IEA led to a proliferation of Indian education programs in the public schools, with tribes, and with Indian organizations; prior to this time, Indian education was confined mainly to BIA-operated schools and mission schools. The 11 years since implementation of the IEA have resulted in writings that describe Indian education in terms of tutoring, counseling, home-school coordination, cultural heritage awareness (particularly in curriculum development), and parental involvement.

Public Law 95-561, the Education Amendments of 1978, further defined and refined educational opportunities in Indian education within the Bureau of Indian Affairs and the Department of Education. The amendments resulted in extensive reforms in the BIA and added provisions to the IEA to respond to ". . . the special educational and culturally related academic needs" of Indian students.

From this background has come a wide variety of writings on Indian education. The accompanying ERIC/CRESS bibliography illustrates that variety and contains valuable information that can benefit practitioners, scholars, and tribes in developing quality education programs for Indian people. The wide diversity of research and other writings on Indian education from the bibliography have been synthesized under the broad categories of curriculum development, counseling, culture, student awareness, testing, program effectiveness, achievement, adult education, Indian women, higher education, and status of Indian education.

TRENDS

The past several years have produced a multi-faceted approach to writings in Indian education. Many recent writings are of a research and technical nature as compared to the thought pieces, concept papers, and opinions of a decade ago. This is a most positive trend. Additionally, there is an increasing number of American Indian and Alaska Native authors who are conducting research on a scholarly and technical level. This has helped to increase understanding, and to relate the needs, concerns, and problems that face Indian education to educators of Indians. Although there has not been a great amount of pure experimental research reported in Indian education in the recent past ("research" is used loosely here to include results reported in program evaluations), the amount of overall research activity being conducted is giving credence to those who have advocated that Indian education is a serious research area that needs attention by the academic community, as well as by practitioners, to record the results of efforts to educate American Indians and Alaska Natives. By recording and publishing research findings, experimental chance can be reduced when replicating methods and techniques new to Indian education.

CURRICULUM DEVELOPMENT

Curriculum development in Indian education has taken a variety of directions due to local education agency interest, local tribal influence, and individual interests of curriculum developers. There has been an upsurge in developing Indian curriculum in math and science to acknowledge the contributions of American Indians and Alaska Natives. In addition, there are research and writings in the more popular fields of reading, bilingualism, English, native cultures, and individual tribal histories.

There still appears to be a void in the area of how to incorporate American Indian and Alaska Native curriculum into the standard curriculum of the total school. The native curriculum that has been developed has been oriented toward separate teaching units, and the total curriculum is not being affected by these efforts. Textbooks utilized by local education agencies still contain very few contributions of American Indians and Alaska Natives. Much of what is written is favorable and idealizes native peoples but lacks a realistic portrayal of native peoples. Current textbooks tend to stereotype Indians and Alaska natives and create an image that is simple and undefined. Indians tend to appear only briefly, with little explanation or description of the event and its significance on American society in general or American Indian society in particular.

Included in the bibliography are several papers and curriculum guides that offer insights into native heritage: A Multi-ethnic Curriculum for Special Education Students (ED 212 107); Multi-Ethnic Literature: Help for the English Teacher (ED 213 043); What Shall Our Children Read? A Selected Bibliography of American Indian Literature for Young People (ED 214 695); The American Indian Social Studies Curriculum Activity Guide, K-6 (ED 214 736); Does Indian Math (Still) Exist? (EJ 255 315); and The Survival of Native American Languages (ED 218 017).

A serious effort needs to be made by American Indians and Alaska Natives as well as non-native researchers to integrate native experience into the total curriculum of local school districts. Specific research needs to be conducted into the nature of tribes of the local area and curricula designed that reflect a realistic perspective of natives in the evolution of American society. The intent should be to include American Indian and Alaska Native curriculum as a natural part of the school curriculum and not a separate unit. By so doing, a comparison of cultures, values, attitudes, lifestyles, and perspectives could be achieved. Merely portraying dark-skinned people in pictures or counting "one little, two little, three little Indians" does not constitute culturally relevant material for any culture. Without a realistic approach to portraying Indians and Alaska Natives in the school curriculum, stereotypes will persist. America's school children need to understand that American Indians and Alaska Natives were influential in the development of this country other than at Thanksgiving and when they fought during the westward expansion.

CULTURE

For decades researchers and practitioners have been recording and researching the effects of culture on American Indian and Alaska Native students in relation to education. The trend continues with a few new variations. A plethora of studies examines the representation of Indians in textbooks, Indian values, Indian family structure, Indian legends and myths, and Indian music and art. A few studies have compared American Indian and non-Indian attitudes, values, and perspectives on education, and suggested possible teaching techniques that could be more effective in teaching Indian students. Some examples are American Indian Family: Cultural Change and Adaptive Strategies (EJ 241 646), North American Indian Myths and Legends for Classroom Use (EJ 243 747), A Papago Maze (EJ 250 758), Young Artists of Alaska (EJ 253 286), Native Bilingual Education: Oral Tradition and the Teacher (ED 205 310), and Cultural Adaptation of the Skills Training Model: Assertion Training with American Indians (ED 210 139).

The study of native languages is currently a popular field of study by many researchers. The American Indian and Alaska Native community has a strong commitment to perpetuate its culture and recognizes that language is inextricably tied to culture. To maintain the language is to preserve the culture. Many tribal researchers and writers are examining the impact of language on education: *An Experience with Language, Fort Smith Teacher Education Program* (ED 224 676); *Language in Education Among Canadian Native Peoples. Language and Literacy Series* (ED 224 629); and *Foster Grandparents Teach Indian Lore and Language* (EJ 247 622).

Several studies have reported the relationship between traditional Indian medicine and healing practices and modern approaches to medicine. One study, *Traditional Healing and Western Health Care: A Case Against Formal Integration* (ED 210 138), argues against the integration of the two approaches while other studies argue for formal integration.

The most promising aspect of researching and writing studies on culture is that individual tribal members are conducting these studies. The sensitivity and understanding of tribal people involved in the study of their tribal culture promotes greater accuracy in reporting the findings. If tribal investigators speak the tribal language, the research effort is greatly strengthened, and misinterpretation of data from the tribal language to English is considerably reduced. Again, researchers need to be cautioned against reporting their findings in a general manner. What is found true for one or several tribes may not necessarily be generalized to all tribes.

COUNSELING

The Indian Education Act has enabled educators of Indian students to supplement regular school counseling and guidance services to provide additional attention for Indian students. The trend appears to be to look inside native students and try to assess the impact that acculturation, assimilation, environment, and school personnel have had on them and then record those reactions. One example of how professional practitioners and researchers are delving into the psychological, perceptual, self-concept, and emotional make-up of Indian students is *Counseling with American Indians: Issues in Training Assertiveness and Coping Skills* (ED 201 436). The effects of public school counseling on Indian students and perspectives on mental health of Indian students are offered in *The Effects of Schooling on the Self-Concept of Native American Students* (ED 220 227).

Recent research has also delved into the effectiveness of Indian counselors versus non-Indian counselors in counseling Indian students. Topics examine the areas of trust between counselors and clients, race and counseling, verbal sincerity, appropriateness of techniques and methods of counseling students, and improving the quality of non-Indian counseling assistance. Examples of this work include Counseling with American Indians: Improving the Quality of Non-Indian Assistance (ED 201 438), American Indian and Caucasian Students' Preferences for Counselors: Effects of Counselor Dress and Sex (EJ 266 872), Historic Distrust and the Counseling of American Indians and Alaska Natives (EJ 250 238), and Effects of Race and Communication Style on Indian Perceptions of Counselor Effectiveness (EJ 251 996). Some authors postulate that Indian students react differently to the external stimuli in the counseling setting based on the student's degree of acculturation or assimilation, and suggest varying methods of addressing these student concerns.

There has also been research that examined and suggested methods and techniques for identifying and counseling Indian students who should consider science, math, and various other technical fields as major areas of study. There have been several in-depth studies that pertained to counselors assisting Indian students in the transition from a community college to a 4-year college, and suggested methods for assessing student interests, skills, capabilities, and needs in making a career choice: The Vocational Counselor and the Indian Student (ED 210 488); Continuing a College Education: A Guide for Counseling the American Indian Student (ED 213 551); and Special Needs of Students: Essentials for State Planning (ED 220 971).

Recent studies on the use of drugs and alcohol by Indian high school students contribute greatly to the understanding of why Indian students seek these alternatives and suggest counseling techniques to use with those students. Examples of the variety of sources that examine student problems reported in the areas of drug and alcohol abuse include Indian Alcoholism and Education (EJ 255 328) and Alcoholism Among Indian Students: Walking Like You Talk (ED 220 242). These studies further understanding of Indian students and suggest approaches for counseling them.

STUDENT DEVELOPMENT

Several recent works examine the relationship of American Indian and Alaska Native parents' interactions with their children in an educational setting. Suggestions and options for parents on how to support and influence their children's education are to be found in To Read or Not to Read: A Parent's Guide (ED 220 233), Parents of Children in Placement: Perspectives and Programs (ED 212 364), and The Indian Family--Foundation for the Future (ED 214 733). Foster care findings are also reported as they relate to the Indian Child Welfare Act in The Indian Child Welfare Act of 1978: Implications for Practice (EJ 250 215).

Health of Indian students is a research area that is gaining in attention. Fetal alcohol syndrome is examined in Report on Outreach Efforts and Analysis of Approach: A Pilot Project on Fetal Alcohol Syndrome for

American Indians (ED 213 561); the impact of drug or alcohol abuse is discussed in Indian Alcoholism and Education (EJ 255 328); and the ramifications of child abuse are reviewed in American Indian Law: Relationship to Child Abuse and Neglect (ED 209 037).

Dr. A. Chuck Ross has initiated studies dealing with Brain Hemispheric Functions and the Native American (EJ 265 024). He postulates that traditional Native Americans are more dominant in right hemisphere thinking, thereby setting them apart from modern left hemispheric-oriented society which is emphasized in schools. He describes some characteristics of Native American thinking that illustrate a right hemispheric orientation. This ground-breaking research represents an area that may have implications on how Indian students learn.

TESTING

Testing literature as it currently relates to American Indians and Alaska Natives explores the appropriateness of various achievement tests, interest inventories, and the overall assessment of Indian students. The case is being made for developing test norms with American Indians and Alaska Natives for more relevancy in interpretation of test results. The accompanying bibliography contains papers that examine the areas of teaching reading to Indian learning disabled (LD) students, identifying LD students, and using interest inventories for American Indian and Alaska Native students. Some sample titles include Use of Interest Inventories with Native Americans: A Case for Local Norms (EJ 246 705) and Evaluation of the Effects of SOMPA Measures on Classification of Students as Mildly Mentally Retarded (EJ 248 614).

There appears to be a lack of reporting on tests that are most effective in classifying, assessing, or accurately interpreting Indian student achievement, gifts, talents, and artistic capabilities. A void still exists in the utilization of tests that are culturally fair to American Indian and Alaska Native students. It is expected that future research will address these concerns.

ACHIEVEMENT

There appears to be on-going interest in assessing American Indian and Alaska Native students' achievements in language, math, reading, English, and science--the basic skills. However, the literature is not extensive, and most writings are of a comparative nature--Indian vs. non-Indian. Recent research is scarce on overall American Indian student achievement in reading, national grade level comparisons, and comparisons of current Indian student achievement with Indian student achievements of 5, 10, and 20 years ago. It is to be hoped that such studies will be conducted soon. Examples of the available literature include Wechsler Scale Performance Patterns of American Indian Children (EJ 256 079) and Navajo Learning Disabled Reading Practices and Procedures (ED 202 631).

ADULT EDUCATION

Because Indian education covers the spectrum of education, writing, studies, and research on the American Indian adult is gaining a more prominent place in Indian education reporting. The adult learner is being given more direct attention in terms of characteristics, curriculum, funding for adult education programs, daily living needs, and teaching methodologies. The attention being paid to the older Indian to address their needs, roles, and provision of services is reflected in American Indian Elderly: A National Profile (ED 219 190), Tribal Aging Programs: A Basic Guide (ED 219 189), Self Development for Native American Adults (ED 220 632), and other writings.

Funding for adult education appears to be lagging significantly behind other educational areas. With federal funding being reduced for all Indian education programs, studies need to be conducted that examine the impact of funding reductions on American Indian adults. In addition, alternatives need to be developed or suggested that will provide practitioners, tribes, and individuals with strategies to deliver educational services to the Indian adult learner and the elderly.

INDIAN WOMEN

The recent upsurge in research, studies, and reports on Indian women is a beginning toward providing insight into the characteristics, stereotypes, available resources, teacher expectations, roles, career choices, and future concerns of American Indian women in American society. Typical of writings in the area are Multicultural Women's Sourcebook: Materials Guide for Use in Women's Studies and Bilingual/Multicultural Programs(ED 216 234) and Shaping Teacher Expectations for Minority Girls. A Teacher Training Module (ED 217 100). The intent reflected in the literature appears to be to provide Indian women particularly and society in general with information that would dispel the myths and misconceptions about American Indian women's roles and to provide alternative approaches in presenting Indian women in a curriculum; The Role of the Native Woman in Native Society (EJ 260 276) is illustrative of the literature available in that area. Several valuable directories have been published listing outstanding Indian women and their areas of expertise; one of these is Resource Guide of American Indian and Alaska Native Women, 1980 (ED 213 559).

The research area on American Indian women is emerging, and it is anticipated that more writings will soon be available. Specific materials are not yet available on tribal women and their role and impact within a tribal government structure or tribal educational setting. Additionally, it is anticipated that information will soon be available on the American Indian woman's role as a policy maker.

HIGHER EDUCATION

Writings on the American Indian and Alaska Native student in higher education continue to be concerned with drop-outs and retention, tribal cultural influences and success in college, attitudes toward college, career choices and access to higher education, vocational education, and Indian students in community colleges. Among examples of these writings are Indian Students' Study Habits and Attitudes (EJ 246 210), A Study of the Contributing Factors Relating to Why American Indian Students Drop Out Of or Graduate from Educational Programs at the University of North Dakota (ED 214 737), Gatekeeping: Access or Retention? (ED 215 652), and Oversight Hearing on Tribally Controlled Community Colleges Assistance Act (ED 221 238).

The trend persists to investigate "what is"; few research pieces are being shared that offer what "could be" regarding the American Indian student in higher education. What is occurring on the pre-college level for the Indian student? What effect do college entrance exams have on Indian student college choices? What is the impact of personal and academic support systems on the Indian collegian? What impacts are tribally controlled community colleges having on the Indian student population?

Included in several interesting areas that have been examined recently are Stress and the Navajo University Students (EJ 246 212), How Instructors Demotivate the American Indian Community College Student (ED 213 565), and Indian Students' Study Habits and Attitudes (EJ 246 210). These studies provide insight to American Indian students and how they cope with the pressures and influences confronting them in higher education. The studies can be most beneficial to practitioners who provide support services to Indian college students.

There are other areas of study in Indian higher education that need attention: increasing Indian participation in research in higher education, gaining access to professional graduate schools, meeting the needs of tribes in tribally controlled community colleges, developing alternative funding sources for Indian college students, and determining the impact of federally-funded teacher training programs on American education. It is hoped that these and other areas of study pertaining to American Indian higher education will be conducted in the near future.

STATUS OF INDIAN EDUCATION

Reports on the situation in American Indian and Alaska Native education provide "status" information. The status area is one of the most important sources in American Indian education because the writings include statistics on American Indian students in Bureau of Indian Affairs schools, analysis of federal education legislation affecting Indians, historical perspectives and statistics in Indian education, resource directories on Indian education, funding for Indian education, statistics on Indian high school drop-outs, a state-wide plan for Indian library services in Wisconsin, and congressional hearing reports on Indian education. Examples of the status report literature include Statistics Concerning Indian Education, Fiscal Year 1979 (ED 202 641); Federal Programs of Assistance to American Indians (ED 205 358); Analysis of Key Federal Legislation Affecting Vocational Education for Indians (ED 199 390); Indian Education: Accomplishments of the Last Decade (EJ 238 623); Resource Directory: Migrant and Indian Exceptional Children (ED 204 075); Qualifying for Federal Funding of Tribally Controlled-Community Colleges (ED 205 353), and Statewide Plan for the Development of Indian Library Services in the State of Wisconsin (ED 212 261).

This background information provides practitioners, policy makers, and researchers with a rich lode to utilize in the development of their particular interest. Most of the status information is particular to American Indians and Alaska Natives, but some of the information is incorporated in studies of ethnic groups, minorities, or students in general. Analysis of federal education laws is particularly useful to Indian tribes, organizations, and Indian higher education institutions in order to have the hands-on material which is necessary to fully participate in these federal programs. For example, Myron Jones shows helpful insights in his report on Indian Education Policy Reform: Policy and Implementation (ED 204 092), which is an analysis and perspective on P.L. 95-561, Title XI.

The importance of reporting the on-going state of Indian education cannot be overemphasized. The writings provide a picture of what is current in Indian education, and the data can be utilized to provide background information to make policy decisions and set future directions. Writers working with comparative data on the status of Indian education are encouraged to submit their writings to ERIC/CRESS for potential inclusion in the ERIC database, so that access to this information can be provided to as large an audience as possible.

PROGRAM EFFECTIVENESS

A most significant trend over the past few years is that of reporting on program effectiveness. The programs evaluated and reported range from local and state Johnson O'Malley Act and Title IV to the Office of Indian Education programs in Washington, D.C. The reporting has particular significance in that most federally-funded projects are required to have annual evaluations, and the sharing of the evaluation results can lend credence to the viability of a project. For example, *The Cost-Effectiveness Analysis of Administrator Training Programs for Native Americans* (ED 208 526) provides insight into the output of the programs compared to costs. A variety of programs are reported for effectiveness: summer programs, student/teacher attitudes and perceptions, math programs and text book evaluation from an American Indian perspective, effects on Indian students of bilingual education, cultural retention program findings, parent participation in educational programs, and various ethnic study programs. Examples of the variety represented include *Chinle Agency Summer Special Education Program: Evaluation and Final Report* (ED 209 010), *Subjective Evaluation of Parent and Teacher Satisfaction with the Northern Cheyenne Behavior Analysis Model of Follow Through* (EJ 263 566), *Indian Education: Guidelines for Evaluating Textbooks from an American Indian Perspective* (ED 209 051), *Navajo Materials for Classroom Use: K-12 Curriculum Directory* (ED 225 753), *"Enlighten My Mind..." Examining the Learning Process through Native Americans' Ways* (EJ 262 102), and *Directory to the Native Studies Programs of Universities in Canada and the United States* (ED 224 673).

A void exists in the program effectiveness area in the sharing of information on evaluation techniques. Indian education practitioners are aware and knowledgeable about evaluation requirements and are somewhat aware of the elements of evaluation, needs assessment, goal development, activities, timelines, cost, and personnel responsibilities. However, information needs to be shared on a variety of evaluation techniques that provide alternatives to practitioners in evaluating their particular project. Evaluation information needs to be developed unique to Indian education that reflects a sensitivity and awareness of the diverse tribal cultures in this country. Additionally, qualitative evaluation techniques need to be developed to complement the quantitative approaches to evaluation.

CONCLUSION

Indian education reporting, writing, and research appears to be diversifying in a number of categories. There are still areas of research that need attention, such as computer education, Indian parent participation in the educational process, impact of tribal control of education, Indian gifted and talented education, expanded research on life-long learning for Indian adults and elderly, vocational education for specific tribal needs, and a host of other topics. The rise of American Indian and Alaska Native researchers and writers gives a more accurate perspective in their areas of research and reporting of their findings.

It is hoped that this monograph will provide the educator of American Indians a most useful and practical aide in the pursuit of quality education for American Indians and Alaska Natives.

SUGGESTED ADDITIONAL READINGS

Indian Education: A National Tragedy--A National Challenge 1969. Report of the Committee on Labor and Public Welfare, United States Senate, Made by Its Special Subcommittee on Indian Education. (1969). Washington, DC. (ERIC Document Reproduction Service No. ED 034 625)

Meriam, Lewis, Comp., And Others. (1928). *The Problem of Indian Administration. Report of a Survey Made at the Request of Honorable Hubert Work, Secretary of the Interior, and Submitted to him, February 21, 1928.* Washington, DC. (ERIC Document Reproduction Service No. ED 087 573)

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May, 1990

EXECUTIVE SUMMARY

©

A National Study Regarding At-Risk Students

INTRODUCTION

This summary provides an overview of a national study conducted by the National Rural and Small Schools Consortium (NRSSC) and the American Council on Rural Special Education (ACRES). Both organizations are headquartered at the National Rural Development Institute, Woodring College of Education, Western Washington University in Bellingham, Washington.

The survey was designed to compare the incidence of various types of at-risk students in rural, urban, and suburban school districts. The study also compared incidences of at-risk students with one or more disabilities. Incidences of various categories of at-risk students at the preschool, elementary, middle, and high school levels were also compared.

An "at-risk student" was operationally defined as one who is involved with one or more of the following categories:

Substance abuse
Suicide attempt/depression/low self-esteem
Child abuse (physical, emotional, verbal, or sexual)
Poverty
Child of alcoholic or substance abuser
Illiteracy
Migrant
School dropout
Sexually active/pregnant
Involvement with crime
Minority and poor
Disability

METHODOLOGY

A total of 1,200 surveys were mailed to school administrators in all states, and a total of 312 surveys were returned. This represents a return of approximately 25%. Of the 312 returns, 185 of the respondents were from rural areas, 71 were urban, and 56 suburban.

FINDINGS

Primary findings included the following:

* Rural school respondents estimated higher percentages of children, both handicapped and non-handicapped, in the at-risk categories. (Thirty-nine separate comparisons of rural and non-rural estimates were made. Rural children fared worse than non-rural children in 34 of the 39 statistical comparisons.)

* Estimates for at-risk mildly handicapped students exceeded those for non-handicapped rural school students in 20 instances, about half of the time. In non-rural schools, mildly handicapped students exceeded non-handicapped students in 14 instances.

* Numerous interesting comparisons resulted regarding differences by at-risk category. Examples follow:

- 17.7 percent of non-handicapped rural high school students were estimated to be substance abusers, compared with 10.1 percent in non-rural districts.
- 12.3 percent of non-handicapped rural elementary schoolchildren were found to be suffering depression/suicide attempts/low self-esteem, compared with 10 percent of urban and 8.5 percent of suburban youngsters. Among learning disabled and other mildly handicappped youngsters, depression/suicide attempt/low self-esteem was a problem among an estimated 16.9 percent of rural grade school pupils, but only 9.5 percent of urban and 12.4 percent of suburban pupils.
- 25.7 percent of non-handicapped rural high school pupils were considered sexually active, compared with 22.5 percent of urban and 20.9 percent of suburban students. Among mildly handicapped rural high schoolers, 26.7 percent were sexually active, compared with only 15.3 percent of urban and 18.2 percent of suburban children.
- 6.7 percent of non-handicapped rural middle school youngsters were said to be involved in crime, compared with an estimated 5.6 percent in urban and suburban schools.
- 12.7 percent of rural preschoolers without handicaps were considered victims of child abuse, compared with 11.9 percent in urban and 9.6 percent in suburban districts.

* **Table 1** below depicts data differences by at-risk category, comparing handicapped and non-handicapped students. The at-risk categories are listed in decreasing order according to the percentages for handicapped students. The rankings are the same for the non-handicapped students with one exception (relating the category of "minority and poor" to the category of "child of an alcoholic parent").

TABLE 1

At-Risk Category	Handicapped	Non-Handicapped
Dysfunctional family	21.1	19.3
Poverty	20.7	18.8
Suicide/depression/low self-esteem	15.5	13.7
Minority and poor	14.7	12.5
Child, alcoholic parent	11.8	12.2
Child abuse	9.3	11.4
Migrant	3.6	6.8

SUMMARY OF ANALYSIS

Rural and non-rural school personnel estimated relatively large percentages of their students to be "at risk." The fact that rural children fared worse than non-rural children in 34 out of 39 statistical comparisons in the study merits concern. The analysis suggests that the social and economic strains facing rural students are every bit as bad, perhaps worse, than those facing inner-city youth. The images of rural children leading wholesome, trouble-free lives compared with youth in more crowded settings may be in need of revision.

As two-thirds of America's school districts and one-third of the nation's children are rural, it is critical that society address these findings. Many rural areas are known for their close-knit communities and family involvement in schools. Others are known for a lack of parental involvement.

The rural tenet of fiercely independent citizens who "take care of their own" and the intimacy of many rural settings can actually contribute to problems. Residents may be less willing to side with an abused or neglected child against a parent they have known for years. Citizens may be employed by such individuals or frequently see them at community functions. A guarantee of confidentiality to a person reporting abuse may be difficult to believe. Citizens may be reticent to use counseling services.

Other obstacles include the lack of social, psychological, and family counseling services in remote, impoverished rural districts. Many rural communities have inadequate medical, prenatal care, special education, foster care, sex education, and instruction designed to prevent drug and alcohol abuse. Career training and vocational education opportunities may be limited.

In many rural areas, conditions that can breed school failure have worsened in recent years. Poverty, family instability, depression and suicide, teen pregnancy, and alcohol and drug abuse have increased as farming, timber, coal, and some fishing industries have declined. Limited employment opportunities feed low aspirations regarding graduation and employment. Low self-esteem may become pervasive.

Th nditions have occured at a time when America has experienced an explosion of s problems such as increases in latchkey children, drug and alcohol abuse, crime, exually transmitted diseases, and the breakup of the traditional American family.

Most at-risk students exhibit more than one of the at-risk characteristics indicated on page one of this summary. Typically, low self-esteem and/or the existence of a dysfunctional family overlay other characteristics.

RECOMMENDATIONS

- The federal and state governments must recognize the extent to which rural students are at risk. Intra and interagency efforts should address collaborative problem solution. Federal and state initiatives should be analyzed regarding their ability to address the needs of at-risk students. States should assess the preservice training of teachers and other personnel related to at-risk students.
- At the local level, collaboration should involve state and local education agencies, university training programs, social agencies (education, foster care, counseling, job training, juvenile incarceration, and others). Existing rural outreach systems such as cooperative extension and public health agencies, civic groups, and volunteer organizations should also be involved in program planning and implementation.
- The link between high self esteem and positive academic grades, school attendance, and social skills must be clearly recognized. The link between poor self esteem and at-risk conditions (e.g., teen pregnancy, delinquency, depression, substance abuse, dysfunctional families, etc.) must also be recognized.
- While at-risk students need and deserve academic tutoring, mentor programs, career counseling and vocational education, health and social services, and other support systems, the most basic ingredient to changing the serious problems of at-risk students, their families, and communities can be best affected by consistently enhancing self-esteem. Parents, teachers, other service providers, and community members need to learn skills that enable students in pain to identify and express their feelings, validate themselves, and gain a sense of self worth and personal power.
- Holistic program approaches should be planned that address the emotional, academic, physical, and social needs of at-risk students and involve families in program planning and implementation.
- Information should be gathered and nationally disseminated regarding effective programs for at-risk students and their families and for related staff and parent training.

FOR FURTHER INFORMATION

For further information regarding these studies or effective practices of working with at-risk students, contact: Dr. Doris Helge, Director, National Rural Development Institute, Woodring College of Education, Western Washington University, Bellingham, Washington 98225 or telephone (206) 676-3576.

RECRUITING, RETAINING & TRAINING TEACHERS

MAKING IT WORK IN RURAL COMMUNITIES

Training, Recruiting, and Retaining Personnel in Rural Areas

A Rural Network Monograph

hceep Rural Network

The Handicapped Children's Early Education Program (HCEEP) Rural Network is an association of professionals representing educational programs for young handicapped children in rural communities. Members are drawn primarily from projects supported by the HCEEP, Office of Special Education, Department of Education. Formed in 1978, the Rural Network undertook to provide a voice for rural America's young handicapped children and their families. The network aimed to increase educational opportunities for this population through the accomplishment of a variety of activities. Participating projects also intended to enhance their own effectiveness in providing educational and supportive services in rural areas. For further information, contact:

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A RURAL NETWORK MONOGRAPH

TRAINING, RECRUITING, AND RETAINING PERSONNEL IN RURAL AREAS

by
Glendon Casto
Judith A. Davis
Gloria Galey
Dianne Garner
Patricia Hutinger
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August, 1981

hceep Rural Network

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INTRODUCTION

Bonnie Smith-Dickson

The purpose of this monograph, one of the initial series of nine HCEEP Rural Network monographs concerning rural service delivery to young handicapped children and their families, is to delineate problems and approaches related to recruiting and maintaining adequately trained professionals in service delivery roles in rural areas, and then to look at specific training programs employed by three federally funded projects. The training programs described were all developed to provide more specialized training to professional service providers and volunteers in rural areas, thereby insuring the availability of more comprehensive services for young handicapped children.

Casto's paper discusses the problem of recruitment and retention inherent in rural service delivery and suggests that the studies which have been undertaken in this area offer strategies for resolution of those problems. Personal aspects and characteristics of individuals which need to be considered when recruiting personnel for rural programs are presented. Conditions which the applicant needs to be aware of when considering a position in a rural environment and which will determine whether he/she can function well in a rural area are also described. Casto then goes on to discuss factors which determine the retention of personnel in rural service delivery: job related influences and influences related to the environment. He presents a specific staff development and inservice training program which is found at the Exceptional Child Center at Utah State University and is easily adopted by any program or agency. Casto emphasizes the importance of recruiting those professionals most likely to stay in rural areas, then making every effort to ensure their job longevity.

Hutinger's paper then goes on to describe a specific training program offered by a university in a rural setting to meet the challenge of the shortage of well-trained early childhood handicapped personnel and training programs at the college level. The Western Illinois University 0-6 Early Childhood Handicapped Personnel Training Project serves to meet three needs: 1) state personnel needs, 2) teacher employment and preparation needs, and 3) handicapped children's needs. It is a participation-based program for undergraduate or graduate students, training them to work with noncategorically handicapped children, ages birth to six in a variety of service delivery settings. Interdisciplinary in nature, the program is built on already existing curricula and leads to certification. Hutinger discusses the training program in depth, covering the program development and characteristics, the curricula, the field experiences, the competencies and the evaluations of both the students and the program. The success of the training program seems to be the focus on early childhood, the interdisciplinary nature of the program, the field work in which the students are involved and the competencies which must be met.

Davis and Porter present another training project developed by the FIT Project in Nashville, Tennessee which serves to unify the service providers within a community. The objectives of the FIT training program are to provide family-mediated programs of service to young children with handicaps and to increase the number of trained professionals able to provide services within a community. This is accomplished through the provision of educational clinics and professional inservice training programs which offer training to locally employed professionals. Davis' and Porter's description of the program provides a comprehensive overview of the participants, the structure of the program, the content areas covered and the operation of the program. We see how these inservice training sessions and clinics serve to spread information and knowledge among the professionals working within a community, allow them to share ideas, responsibilities and goals, and lead to open communication and increased assessibility to the resources available within a community. As a result more comprehensive services are offered to young handicapped children and their families. The training program can be adopted in other communities.

The paper from the personnel at the DEBT Project describes the D.O.T.S. training program developed for volunteers. Two purposes are behind the training: 1) for volunteers to acquire basic competencies needed to identify young handicapped children and to be aware of the services available within the community and 2) for educators and volunteers to become informed as to services provided through the state and local agencies. The authors describe the recruitment procedures used and actual steps of the training: preservice training, field experiences and on-site evaluations. They provide an indepth picture of the training content, including the use of video materials and supplemental readings. This particular program can also be adopted by other agencies.

Together, the four papers acquaint the reader with the problems inherent in finding the appropriate personnel to work in rural areas, suggest strategies for retaining staff, and then give three distinctly different training programs which serve to offer solutions to the problems. The three programs described all apply to different target audiences, providing a comprehensive picture of ways to better achieve quality personnel to serve young handicapped children and their families.

RECRUITMENT AND RETENTION OF PERSONNEL IN RURAL AREAS

Glendon Casto

The problems inherent in recruiting and retaining sufficient personnel to provide adequate services for the handicapped in rural areas cut across every human service agency. For example, Roemer (1976) reported that in the health care area, 80% of the professional people tend to be concentrated in urban areas. Helge (1981) found that 94% of states surveyed by the National Rural Project reported that recruiting and retaining qualified staff were major problems for rural education agencies. Sometimes when sufficient staff do exist, they are poorly qualified. Hofmeister (1976) surveyed rural centers in Utah and Neveda that provide services to the developmentally disabled and found that over 30% of the service-providing staff were not trained at an adequate professional level. A study by Hollingsworth & Hendricks (1977) surveyed the staffing patterns of 10 rural mental health centers throughout the United States and found that less than 10% of the staff were professional level, with the balance of service provision coming from paraprofessionals, aides, social service case workers, and volunteers.

Realizing the problem of attracting and retaining rural service providers of high professional quality, it is imperative that solutions be devised and tested empiracally. Suggestions as to the resolution of recruitment and retention problems can be found in a review of the studies that have been undertaken in this area.

Recruitment

It is essential for project directors and those professionals involved in hiring personnel to be informed about the necessary and sufficient conditions for living and working successfully in rural areas when recruiting personnel. These conditions need to be assessed and carefully reviewed with job applicants in order to hire individuals who are likely to most successfully work within the rural environment.

Previous Experience in the Rural Environment

If persons have not had previous work experience in sparsely populated areas, then a sponsored site visit should be provided so that potential service providers can see for themselves if they can live and work successfully in a particular rural environment. Helge (1981) identified geographic factors such as marginal highways and far-reaching distances between schools as being major problems in rural areas. If one is used to these conditions, they are not seen as major problems; if one is not, they can be devastating.

BEST COPY AVAILABLE

Appreciation of Rural Cultures

One doesn't have to understand and appreciate rural cultures to function in them, but such understanding and appreciation does contribute to job effectiveness. Greenbaum (1968) reported on a director of a small, rural mental health clinic who utilized his ability to understand local cultures to achieve success in a rural clinic. Withholding judgment about mores not only prevents problems, but facilitates being accepted into a local culture rapidly. Such small items as learning about local history and geography, and learning survival language phrases in local minority languages contribute to one's acceptance.

Professional Independence

One of the biggest frustrations for professionals in rural areas is not having the ability to consult with other professionals on a daily basis. Furthermore, the inability to participate in meaningful in-service training further compounds the problem. The solution seems to be two-fold. First, recruit those individuals who are self-sufficient and able to function somewhat independently on the job; and, second, develop systems of in-service training that work in rural areas. Such systems, whether they be the highly structured ongoing in-service training advocated by Fredericks et al. (1975) or packaged in-service training as advocated by Hofmeister (1976) provide the necessary updating of skills.

Personal Support System

Having a personal support system consisting of friends and co-workers who live and work in the same rural area is also important for the rural professional. Having people in the same community who can be depended on in case of emergencies, who allow the worker to share personal feelings, and who provide positive reinforcement and constructive criticism is crucial. Many times, this personal support system will maintain a rural area professional in a community even if his job is not entirely satisfactory.

Rural Recreational Interests

Having recreational or leisure time interests that match the rural environment provide the potential service provider with several benefits. The first benefit is that leisure time activities can serve as beneficial "time outs" from job stress. In fact, not having such interests can contribute to job burnout since the worker finds leisure time very boring or frustrating. "There's nothing to do in this community" is a common complaint of professionals in rural areas. Job burnout is defined as a loss of job effectiveness with associated emotional and physical disorders and complaints; this often results from prolonged and unmanageable stress which can be both job and environment related.

In recruiting personnel for rural areas then, attention should be given to the fact that persons having the attributes mentioned previously are more likely to want to go to rural areas and are more likely to stay on the job once they get there.

Retention

Once a person is recruited for a position in a rural area, two factors come into play that have important influence on a person's longevity in that position. Broadly stated, these factors include job-related influences and factors related to the local environment.

Under job-related influences fall variables such as: a) satisfaction with defined duties; b) physical environment in which work is conducted; c) salary and fringe benefits; d) relationships with supervisor and co-workers; e) reinforcement from students or clients; f) availability of support services; and g) in-service training opportunities.

Influences Related to the Job

Satisfaction with defined duties. Most job-related influences can be altered. The important thing is to collect data at each local project level that pinpoints sources of job dissatisfaction. Then, remedial steps can be taken. For example, a regional early intervention program in a sparsely populated area had many dissatisfied employees. A survey was done which revealed that employees were unsure of their job responsibilities and unsure of the organizational structure of the agency. A team of parents, board members, and professionals were able to develop a table of organization, clearly stated job descriptions, and policies and procedures to be utilized in carrying out the activities of the regional program. The remedial procedures took four days and prevented many staff resignations.

As stated earlier, the assessment of job satisfaction levels of employees on a formal or informal basis can lead to job-related improvements which dramatically increase job satisfaction.

Physical environment in which work is conducted. Numerous studies have reported on the effects of various facilities on worker productivity and satisfaction. Farnkin et al. (1977) reported on two mental health teams who moved from an old, drab clinic building to a new building. A third team remained in the old building. The staff in the new surroundings reported a significant increase in satisfaction with their physical environment as compared to the staff that did not move. More importantly, their satisfaction with the improved physical environment resulted in improvements in their overall job satisfaction ratings. Many early special education programs were located in unwanted and unused facilities. An ugly or overcrowded facility can have a depressing effect on both children and staff.

Salaries and fringe benefits. Unlike the North Slope oil project in Alaska, where bonus pay for living and working in rural areas is astronomical, most rural personnel suffer from being overworked and underpaid. This situation persists despite the fact that surveys such as Needle, Griffin & Svendsen (1980) demonstrate the importance of salaries and fringe benefits to rural professionals.

If sufficient monies do not exist to pay competitive salaries, then considering alternative service delivery strategies might be feasible, these include hiring fewer persons at a professional level at competitive salaries and hiring more paraprofessionals.

Relationships with supervisors and co-workers. Peer and supervisory support may help alleviate job stress in difficult situations and assist in retaining personnel. This help may be in the form of information to assist with unusual problems, in addition to the provision of emotional support (Daley, 1979). Supervisors and peers also provide most of the reinforcement. When that reinforcement is adequate, job satisfaction is rated higher. Supervisors allowing their employees to use their discretion concerning sick and annual leave can help alleviate job stress and help retain employees.

Of the coping strategies suggested, perhaps the most effective and practical way to help retain existing staff is to develop a support network among staff members who work together. By cultivating a sense of group membership, it is hoped that no one staff member will become isolated and overwhelmed by the stresses of work. It is beneficial for staff members to have access to emotional support from their co-workers. One's colleagues can be quite helpful in helping establish reasonable goals and expectations, as well as in helping one to cope with stresses caused by work.

Reinforcement from students or clients. This relates closely to the severity of client problems. The most severely impaired clients are usually the most difficult because of their slow response to treatment. It may be frustrating to wait weeks and sometimes months for noticeable improvement. It has been suggested that this problem may be alleviated by arranging for all staff members to share the caseload and also to rotate the more difficult clients repeatedly. One of the unique problems of the rural area professional staff is that it is usually small, so efforts toward rotating clients must be carefully planned.

Another suggested coping mechanism that has a possibility of success for the rural professional is to allow staff members to get away from direct client contact and spend some working hours doing other duties such as administrational and community speaking (Pines & Maslach, 1978).

It has also been suggested that changing the function of staff meetings may be an effective burnout prevention technique (Pines & Maslach, 1978). Instead of just being a time to get together and discuss clients and administrative policies, Maslach has suggested that staff members be encouraged to offer input into institution policy-making, as well as to exchange support with each other and discuss job stress in a more informal manner.

Availability of support services. A sixth job-related factor that contributes to higher retention rates is the availability of support services. Again, if rural personnel have access to direct communication with technical assistance personnel, they are less likely to feel isolated and alone. WATS line communication channels can be set up and dedicated closed-circuit television can be utilized to transmit training and technical information. Other support system services contributing to the retention of rural personnel are information dissemination systems, access to some type of technical assistance, and access to regional and national conferences.

Information dissemination systems can include newsletters, dissemination of information regarding new or innovative programs, supplying grant or program development information of particular importance to rural service providers or answering requests for information from rural professionals. Such systems can be operated on a national, regional, state, or local basis.

Technical assistance needs can usually be met by state or regional agencies. In some cases, rural areas can become replication sites for federally funded projects and receive technical assistance this way.

Having access to regional and national conferences is also a necessary part of a good staff support system. Such conferences assist in upgrading skill levels and serve as welcome breaks.

Staff development and in-service training activities. Another job-related factor that contributes to higher retention rates is improved staff development and in-service training capability. Many times, staff members in rural settings are isolated from professionals in the field. To maintain and improve their skill levels, individual training plans should be developed for every individual in an organization. These plans should be individualized, but they may contain both individual and group training activities.

The Exceptional Child Center, located at Utah State University, is an example of an organization involved in delivering in-service training to developmental disabilities specialists in remote, rural areas. The training provided includes individual activities and a series of nine complete training packages which are utilized in in-service settings. Each package is self-contained and complete, including a videotape presentation prepared by a professional expert in the topic being covered, a participant's manual, resource materials, and specific instructions and resource materials for the staff member designated to coordinate the local training session. This model allows the service agency to conduct training sessions as they are needed and desired by service providers anywhere in the state.

For each session, a professional, with expertise concerning the information or skill to be trained, developed the training materials. The prime training vehicle is a videotape presentation organized by the consultant to present the material in the most effective manner possible. The greatest advantage of the videotape format is the opportunity to include stimulating and graphic variations on the typical lecture format to which direct on-site training is limited. The video materials include simulated conferences, selected actual interviews, demonstrations of skills, and dramatizations of content or technique. Such vehicles can be used to demonstrate or enhance points being made by the lecturer in a manner not available to a consultant brought in for snort-term training. In this way, one is able to provide intensive,stimulating, and varied training in a very limited period of time.

Materials were prepared for the participants of each session to accompany and increase the effectiveness of the training in each session. Each participant received a manual to be retained for future reference which covered all material presented in the training tape, as well as additional information and resource materials. To ensure involvement and maximum comprehension and internalization of material presented by the participants, each session included two or more practice exercises. These exercises ranged from group activities involving application, interpretation, or role playing of skills and techniques described to discussion of specific information, suggestions, or facts presented in the taped presentation and printed materials.

To determine how well the objectives of the session had been met, each participant was, individually, required to complete a final test on the material covered. This, too, was accomplished by using self-scoring response cards to provide participants with non-threatening immediate feedback on the accuracy of their responses. A criterion of 80% accuracy was established.

All in all, this in-service training model represents a simple, flexible, and highly cost-effective means of providing regular, quality, specialized training to service providers in rural, remote areas. The utilization of such a model appears to be limited only by the imagination and skill of its developers. It has been shown to adapt well to a great variety of skills and content material. Such a model provides an excellent, intensive, non-threatening and stimulating approach to in-service training, particulary in those areas where such services have proven difficult. The flexibility of this model allows the delivery of specifically tailored-quality training in an easily implemented, reusable format to staff at any locale.

Where videotape capability does not exist, packaged training materials can be developed utilizing a format that Project ISTRA (a developmental disabilities project of national significance entitled Innovations in Service and Training in Rural Areas; the project is located at Utah State University's Exceptional Child

Center) utilized in developing training packages for use in rural areas. These packages are stand-alone instructional systems which contain terminal objectives, instructional sequences, criterion tests, and suggested media. The packages can be utilized by on-site personnel to deliver high-quality in-service training. The use of packaged training programs ensures that critical skills are acquired by key staff members, provides training of large numbers of people economically, and allows flexibility in meeting specific training needs. In addition, the criterion tests enable one to document levels of skills attained through in-service training programs.

Influences Related to the Local Environment

Environmental variables that contribute to retention include degree of satisfaction with: a) cultural and recreational opportunities, b) degree of acceptance by members of a rural community, and c) degree of acceptance of local geography and climate.

Cultural and recreational opportunities. To the extent that a worker's cultural and recreational interests match those available in the rural environment he/she is more likely to remain in that environment. When there is a clear mismatch, some adjustment must occur or the worker is not likely to remain. Tucker (1970) has advocated that workers take an inventory of their own cultural and recreational interests, take an inventory of those available in the local culture, and then develop an individual plan of action to maximize their cultural and recreational opportunities. In some cases, substitutions can be made, i.e., water skiing for snow skiing. In other cases, trips outside may be planned to meet cultural or recreational needs.

Acceptance by members of rural communities. Many rural communities view outsiders with suspicion and mistrust. Being alienated from community life results in increased stress and reduced productivity. This alienation may occur because the community is slow to accept outsiders, or it may occur because the outsider is culturally arrogant and tends to belittle the local community. In either case, acceptance may be gained by showing genuine interest in community life and reacting positively to the community.

Acceptance of local geography and climate. A rural worker in Utah complained bitterly about the amount of driving required to deliver services in remote, isolated areas. Another worker refused to complain, even though she wore out a new automobile in 18 months time. The first worker came from a large metropolitan area where she drove as little as 100 miles per month. The second grew up in the service delivery area and routinely drove 2,000 miles per month. Geographic and climatic differences exist in rural areas which can be taken in stride or which pose serious problems. Acceptance of such variations is part of the characteristics of those service providers who tend to remain in rural areas.

Conclusion

The cost of replacing rural professionals who leave positions after a short time has never been calculated. If such costs could be ascertained, they would be staggering. This is one of the critical factors in rural service delivery that must be foremost in our minds. When recruiting a staff, we must direct our attention to recruiting those professionals most likely to remain in rural areas and then take all possible measures to ensure their job longevity.

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APPROACH FOR TRAINING EARLY CHILDHOOD TEACHERS: WIU 0-6 EARLY CHILDHOOD HANDICAPPED PERSONNEL TRAINING PROJECT

Patricia Hutinger

Since the passage of Public Law 94-142, which represents a comprehensive commitment to providing equal education opportunity for handicapped children, whether rural or urban, there has been increasing emphasis on serving very young handicapped children and their families. But who is to fill the role of service provider or teacher? The critical need for services for handicapped children, beginning at birth, presents a tremendous challenge both to public school systems and to university teacher training programs, the economic and political climate of the nation in 1981 contributing in part to this challenge. There is not only a shortage of well-trained early childhood handicapped personnel, but also there is a corresponding shortage of early childhood handicapped training programs in colleges and universities. Even fewer programs focus on training personnel for work in rural communities. The purpose of this paper is to describe one training program offered by a university in a rural setting.

Public schools in a number of states must provide services for very young handicapped children in both rural and urban settings. In the 1977 edition of Planning Programs for Early Education of the Handicapped (Ellis & Cross), the editors reported that eight states had mandated educational services for handicapped children beginning at birth, while 23 other states have permissive legislation to serve that population. Several states have legislated services for the child beginning at birth if the child has an obvious specific handicap (such as blindness or deafness). The trend toward providing increased services to handicapped children below the age of three will be likely to continue, particularly as more evidence attesting to the efficacy of very early intervention is amassed. Many states mandate that services begin at age three. However, rural schools find themselves hard-pressed to provide services for young exceptional children. Hiring and recruiting personnel for rural programs is a major part of the problem, in addition to the existence of funding formulas weighted in favor of urban schools. State educational agencies have been seeking ways to develop programming to train personnel for early childhood programs.

In order to meet the needs for personnel to work in early childhood handicapped (ECH) programs, faculty at Western Illinois University developed the 0-6 ECH Personnel Preparation Project. Major impetus for the 0-6 Project came from an already successful federally funded First Chance birth-to-three rural program (The Macomb 0-3 Project: A Rural Child/Parent Service) which began in 1975. The WIU 0-6 Project addresses itself to three vital issues: state personnel needs, teacher employment and preparation needs, and, ultimately, handicapped children's needs. Focusing on the birth to six spectrum provides personnel who can develop programming for infants, toddlers, and the 3-5-year-old range, depending on the age emphasis in the employing school district or agency. Practicum work is carried on in rural schools and agencies.

Teacher education programs are not geared to expeditious change. Although there has been much action in the field of early intervention, it has been largely related to program content and to children's needs. Attention to personnel demands, whether pre-service or in-service, is relatively recent. The WIU 0-6 Project, therefore, has concentrated on developing a program that utilizes already existing curricula in the college and university as a base on which to build an innovative program of personnel preparation. A strong Early Childhood program has been in place since 1968, so coursework was already approved at undergraduate and graduate levels. Because of the rural commitment of the University, the project has a rural focus, but cannot be said to be a vehicle for training rural personnel alone, since graduates also work in large communities. Nevertheless, because the WIU 0-6 Project was developed from the needs found in a rural First Chance project, uses that project as a practicum site, and shares the same director, content related to rural programs is emphasized at all points.

Project Development

Planning the Project was a cooperative venture among university faculty, students, and agencies that serve children. During the planning stages, five undergraduate students served as advisory and planning members of the team who developed the Project. In addition, the staff of the Warren Achievement School in Monmouth, Illinois (a community of 15,000) were members of the planning team. The school is a facility designed especially for severely handicapped children. Three preschool handicapped teachers (practicum site staff) were involved in planning the Project and serve as practicum site supervisors. These teachers are housed in Bushnell and Colchester, communities of less than 10,000. Also involved in planning were personnel from the Western Illinois Association for Handicapped, and the West Central Illinois Special Education Cooperative, as well as the project co-directors of the Macomb 0-3 Regional Project at Western Illinois University, another practicum site. In addition, a member of the Illinois Office of Education was involved in planning. All these people provided information regarding Project content, necessary competencies, dimensions for evaluation, and procedures for implementing practicum experiences.

Project Description

The WIU 0-6 Project, which began in 1977, is a participation-based program, designed to train professional educators in the competencies that will enable them to work with noncategorically handicapped children from birth to six years of age in a variety of service delivery settings. A two-semester, fifth-year program, it is interdisciplinary in nature, with faculty from three colleges and four departments. Students also come from different backgrounds and majors.

Students who complete the program have both knowledge and skills to serve as classroom teachers in preschool handicapped rooms; as teachers in birth to six programs in various public and private settings; as home-based teachers for children from birth to six and their parents; as physical education-therapists in schools, institutions and/or homes; as psychologists and/or guidance counselors for children and their parents; as camp or recreational personnel for handicapped children; or as speech therapists and/or audiologists in a variety of preschool programs. Prospective employers from many states seek personnel for Early Childhood Handicapped (ECH) programs. All graduates of the program have been placed; many more could be placed than are available.

Training in the 0-6 Project is designed to take place at the junior year level. There is also a graduate component for students seeking the Masters degree. Most undergraduate students come from the University's basic curriculum which emphasizes a broad basic preparation. The College of Education provides some beginning level field-based experiences. Students also enter from junior colleges with basic course work and experiences. The 0-6 ECH Personnel Training Program is designed as a two semester sequence.

Coursework in the 0-6 Project originally consisted of courses which were a part of the curriculum when the Project began. Three new courses have been developed. Two of those courses are Special Education courses in early childhood handicapped (one in characteristics, the other in methods) and the third is a graduate course in programs for infants.

The 0-6 Project provides a part of the coursework in several programs which prepare personnel to work with young children and leads toward teaching certification. The Department of Special Education has a program for certifying Special Education personnel (Illinois Type 10 certificate), while the Department of Elementary Education has an approved expanded program in Early Childhood which leads to the Early Childhood certificate (Illinois Type 2 certificate). Child Development students in Home Economics may also work toward an Illinois Type 2 certificate in the Early Childhood program.

Program Characteristics

Four factors which interact with one another are responsible for the unique characteristics of the WIU 0-6 Project. First, the focus on early childhood, beginning at birth, provides a unifying element. Second, the interdisciplinary nature of both faculty and students provides a unique blend. Third, the extensive field-work provides a broad base of experience for students, with accompanying input from practica-site personnel. Fourth, the competencies developed in the project provide a unique set of skills and knowledge especially targeted for those who plan to work with the very young child and his/her family.

Faculty team members are housed in four departments across three colleges (Education, Health, Physical Education and Recreation, and Applied Science). Faculty share instructional responsibility and make specific content contributions. Team members come from Special Education, Elementary Education--Early Childhood, Home Economics--Child Development, and Physical Education. Content includes methods and materials, characteristics of handicapping conditions, psychoeducational evaluation, behavior management, philosophy, curriculum organization, administration, programs, development, assessment, family relations, nutrition, motor development, adaptives, activities, movement and kinesiology.

The WIU 0-6 Project provides a forum for the exchange of ideas and techniques relating to the young handicapped child. Students training in the program have the opportunity for exposure to a broad range of interests, orientations, and knowledge bases.

Project faculty develop instructional strategies designed so that the students can gain the appropriate competencies. Team members are also responsible for supervising students in practicum sites, working cooperatively with the staff in those sites and providing in-service training where needed. Project faculty are involved in team teaching, cooperative planning, evaluation, development of new materials, and recruiting students into the program.

The program philosophy is one that calls for extensive practical experience with young children, both handicapped and those that are developing normally. Rather than concentrating coursework at the beginning of the program and practical experiences at the end, practical experience with children is an integral part of all phases of the WIU 0-6 Project.

Students spend well over 100 hours in practicum settings working with both handicapped and typical young children. Supervisory personnel, who are also involved in planning, evaluate both student performance and project activities. Practicum sites include: preschool handicapped classrooms in the counties surrounding Western Illinois University; a home-based 0-3 training program for the infant handicapped and their parents; a center-based program for persons from birth to adulthood (including approximately 150 preschool children) who are physically handicapped, mentally retarded and orthopedically handicapped; area day care centers for typically developing children; a University classroom for three-to-five-year-olds and a University infant center. All students participate in the two University facilities as well as the area day care centers to gain experience with children whose development is relatively typical. The program insures careful placement of students in practicum sites in relationship to their previous experiences, their major area, and their specific needs. Students spend two semesters in combined coursework and practical work with children at the practicum sites, and the third semester doing an internship (student teaching). This is sometimes spent on-site with the same cooperating agencies or programs that served as practicum sites.

Students have practical experience with a variety of professionals, such as occupational therapists, physical therapists, pediatric nurses, pediatricians, public health personnel, homemakers and licensing representatives from the Department of Children and Family Services, community agencies, United Cerebral Palsy representatives, and other resource/consultant groups or individuals. Seminars and presentations in a variety of formats are used.

Competencies

A comprehensive set of competencies for training personnel to deal with the very young child have been developed from coursework content and practica activities. The unique preparation of each student is determined and analyzed, because individual students enter the program with different experiences and possess different competencies. Differences in competencies are considered when the student's program is developed. Decision-making regarding the development of a student's program includes the student, the program faculty, observers of the student's work with children and parents, and practicum site personnel. Course content and competencies are planned to meet the needs of certification, as well as the practical needs of programs for handicapped young children.

Although students are enrolled in regular university courses, the nature of coursework is different from customary lectures. Competencies necessary to the effective planning and managing of educational environments for young handicapped children have been developed for each program area represented by special education, elementary education, home economics, and physical education. The competencies are arranged in four broad areas and cover the following knowledge and skill areas:

I. Assessment
  A. Child find procedures
  B. Criteria-referenced and norm-referenced measurement
  C. Classroom diagnosis
  D. Observational recording
  E. Case study

II. Instructional Planning, Implementation, and Evaluation
  A. Development of IEP's
  B. Normal child development
  C. Behavior management
  D. Instructional delivery
  E. Task analysis
  F. Adaptation of instructional materials and curricula
  G. Curriculum development
  H. Staff utilization
  I. Programming
    1. Motor (mobility, gross, and fine)
    2. Sensory or perceptual
    3. Communication
    4. Socialization
    5. Self-help
    6. Cognition
  J. Self-help

III. Consultation and Training
  A. Working with families
  B. Training classroom support personnel
  C. Functioning as a team leader
  D. Working with community agencies and service providers

IV. Child and Family Advocacy
  A. Knowledge of federal laws
  B. Knowledge of state regulations
  C. Knowledge of LEA organizations and procedures

All students contract for and attain competencies which are acquired from experience with handicapped and normal children, as well as from a thorough knowledge base of developmental concepts and principles. Students demonstrate knowledge competencies through satisfactory completion of written or oral tests, as well as in application activities. Skill competencies are demonstrated in the practicum sites and through accomplishing application activities. Content is organized in modules, seminars, and immediate practica experiences; other strategies include large group, small group, and individual instruction. Sample competencies are contained in Figure 1.

Figure 1
Sample of Student Competencies
for 0-6 ECH Personnel Training Project

STUDENT OUTCOME	PROCESS	PERFORMANCE INDICATORS	
		KNOWLEDGE	SKILL
2.04.01 Demonstrate knowledge of statistics used in developing and scoring standardized instruments.	2.04.01 Study the programmed materials. Listen to class lectures. Participate in class discussions.	2.04.01 Given a test on statistics the student must be able to recall information on averages, percentages, and standard scores in order to pass correctly 90% of the items.	
2.04.02 Demonstrate ability to apply statistical knowledge to practical situations related to young children.	2.04.02 Examine simulated data and interpretations. Solve problems using necessary statistical procedures. Interpret simulated data.		2.04.02 Given a set of simulated data on selected instruments, the student must be able to correctly figure the standard score, convert the score to percentages, record the results, interpret the results statistically.
2.04.03 Demonstrate knowledge of principles of developing diagnostic, screening and assessment instruments for very young children.	2.04.03 Read selected materials, including books, articles, and ERIC documents. Examine selected instruments. Participate in group discussions.	2.04.03 The student will pass an essay test with 80% correct, listing and defining the principles of developing diagnostic, screening and assessment instruments.	
2.04.04 Demonstrate ability to apply knowledge in 2.04.03 to practical situations related to young children.	2.04.04 Write plans to accomplish the program listed under skill. Collect materials, make arrangements necessary. Discuss project with supervising teachers.		2.04.04 Prepare and present (to peers) a program explaining a planned screening and/or assessment program to a selected audience, for example: a) parents b) other teachers c) another group
3.01.01 Demonstrate knowledge of appropriate delivery strategies used with parents of children under six.	3.01.01 Observe strategies used, read selected literature, and listen to information presented by resource persons. Attend at least two parent meetings. Attend a 0-3 Advisory Council meeting.	3.01.01 Student can analyze selected approaches to working with parents.	3.01.01 Student must be able to plan and participate in a discussion of delivery strategies with the Saturday School teachers, the Macomb 0-3 [illegible], a preschool handicapped teacher and two parents.
3.01.02 Demonstrate activities for a home visit, as a delivery strategy.	3.01.02 Observe videotaped home visits. Observe a home visit.	3.01.02 Student can list principles for planning and evaluating home visits.	3.01.02 Student must be able to write plans and carry out home visit activities for a particular child.

The 0-6 Project has been able to make a contribution to early childhood education with its competencies. They have been shared upon request with SEA personnel in Maine, West Virginia and North Carolina. An overview of the Project was presented at a national meeting held by the Personnel Preparation Division (PPD) in Washington and the office has had requests for further information from universities throughout the country. It has also been the subject of several articles in teacher education journals (Hutinger, 1981; Hutinger and Leigh, 1981; Hutinger and Swartz, 1979).

Evaluation

Data collection instruments for determining answers to specific evaluation questions include several measures unique to the 0-6 Project. In order to determine and evaluate the activities of both students and faculty, a computer-based 0-6 Student/Staff Activities Accountability Program (0-6 SSAAP) is used. Administrative questions related to the amount of time students and faculty spend on various activities is provided through analysis of the SSAAP data. The program contains categories and activities developed by the 1977-78 students and faculty. Procedures include recording and coding daily activities on a Weekly Event Record sheet using discrete categories related to time, activity, location, and attendance of individual students and staff members.

Evaluation of student progress is accomplished through attainment of competencies, with records maintained in the Project Office. Attainment of competencies stated in measurable terms is an obvious and accurate way to measure behavior change. All students must demonstrate all competencies before they complete the Project. Students are counseled before entering so that very few drop out of the program.

Student evaluation of the program is accomplished through both informal day-to-day verbal communication and suggestions to the 0-6 team, as well as through responses to questionnaires and in individual interviews with one or more of the 0-6 faculty team. Practicum site staff evaluation of the program is accomplished through the use of questionnaires and through informal contacts with the 0-6 faculty team. Satisfaction of the 0-6 faculty team with the Project is determined by means of questionnaires and conferences with the entire team. The fact that three of the team were involved in beginning the Project and continue on the faculty team is one indication that the Project is effectively accomplishing its intended goals. Four of the practicum supervisors have also been involved with the initial planning of the Project and continue to work with 0-6 students. There is ongoing informal communication among faculty and practicum site staff with frequent meetings and social gatherings.

Evaluation of graduates' performance by their employers has been an integral part of the program. Employers report that they would hire the people again, express satisfaction with their performance, and cite areas where the individuals demonstrate strengths. Employers have also provided information which has led to changes in content, as have Project graduates

Overall data [illegible] indicates that it is providing program graduates with the necessary skills to be effective teachers of very young handicapped children. Such success is expected to lead to the use of the Western Illinois University 0-6 Early Childhood Handicapped Interdisciplinary Personnel Preparation Project as a model for the development of other teacher education programs for young handicapped children. Since experience is gained in rural sites, students have clear expectations and experiences related to the nature of rural communities and programs. They understand the difficulties in providing rural services, the scarcity of services and the strengths of rural people and communities.

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AN INSERVICE TRAINING PROGRAM FOR RURAL AREA PROFESSIONALS CONCERNED WITH EARLY CHILDHOOD SPECIAL EDUCATION

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During three years of model development, the Family, Infant and Toddler (FIT) Project* directed its efforts toward the development and establishment of community supported programs for preschool handicapped children and their families in rural areas where there were no existing programs. The project was guided by an ecological orientation (Gabel, 1979) involving a systems intervention approach to working within communities. The concepts within the project orientation and approach included viewing individuals as active members of systems, and viewing the entire community as being comprised of multiple and interdependent systems (Holahan, 1977). Thus, the project staff conceptualized a rural community as one system consisting of many subsystems such as families, church congregations, neighborhoods, extended families, service delivery agencies, and the like. Additionally, the project orientation included the view that each subsystem influenced and was influenced by all other subsystems. A project strategy emerging from this conceptualization was one of mobilizing two subsystems of the community considered most intimately related to one another within the dimensions of the project mission. Two of the multiple resources available in rural communities involved in service delivery are the clients and the service providers. The FIT Project linked itself with young handicapped children and their families and professionals employed in local and regional service delivery agencies.

The concept of a community supported program encompassed two programmatic objectives. The first objective addressed the development and delivery of a family-mediated program of services to young children with handicaps. The second objective was directed toward increasing the pool of trained professionals able to provide and/or guide the delivery of services in rural areas by offering training to rural area professionals. The FIT Project, based at George Peabody College of Vanderbilt University, operated educational clinics and professional inservice training programs in four rural communities in Middle Tennessee in order to accomplish its two primary objectives.

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*The FIT Project (1978-1981), during its model development phase, was a component of the John F. Kennedy Center for Research on Education and Human Development, George Peabody College for Teachers of Vanderbilt University, Nashville, Tennessee. The project was supported with funds from the Office of Special Education (Grant No. G007802932) with matching funds provided by the Tennessee Department of Mental Health and Mental Retardation. The contents of this paper do not reflect the position or policy of the U.S. Department of Education, and no official endorsement of the content should be inferred.

Training Program

The training program emerged relative to the project objective of establishing community support programs that would continue beyond the years of the federally funded demonstration project. The mission of the training program was to enhance a community's ability to provide quality services by offering training to locally employed professionals. Goals derived from this mission included providing training in all aspects of educational intervention with handicapped preschool children and their families, program development and supervision issues, and strategies for procuring program funds.

A perspective of the training program was that rural areas contained a diversity of highly trained professionals employed in local agencies who already were providing for some needs of handicapped preschool children and their families. However, it was likely that individual agency staff lacked the specialized training required to comprehensively meet the educational intervention needs of these clients, thus allowing for major omissions in service delivery. For example, a mental health professional could provide assistance to parents in coping with some of the difficulties of having an infant who was handicapped, but may lack the information (i.e., child management, special parent needs, and so forth) to offer concrete suggestions directed toward alleviating some of the stresses. Similarly, a special educator could provide information concerning teaching strategies and program planning, but probably lacks the training in early childhood development to be able to provide for the child's educational needs. The program perspective was that with some additional training, rural area professionals would be able to provide quality, comprehensive services to young handicapped children and their families.

In keeping with the ecological and systems orientations of the project, specific strategies emerged in the operation of the training program. The approach of attending to the needs of individual professionals within their own agencies and within the broader context of the community's need for preschool special education services led to concern with issues such as co-ownership of project services. Other strategies addressed the expertise and territory of the trainees, and attention to the needs and roles of individual professionals and agencies relative to each other and within the contexts of the broader community. A project assumption was that the training program offered specialized training to qualified professionals already providing services, albeit piecemeal, to young handicapped children and their families. The training program was considered a resource available to the staff of rural agencies interested in engaging in a collaborative effort directed toward comprehensive service delivery.

It was anticipated that a by-product of the projects/agencies' collaborative effort would be the potential for local agencies to form linkage with each other in terms of general service delivery as well as with young handicapped children and their families. Participation in the training program offered individual agencies the opportunity to share relevant information about their agency with other local agencies. Examples of relevant information included agency services, guidelines and constraints of the funding structure and source, staff expertise, and plans for the future. In addition, participants from community agencies were given opportunities to discuss locally relevant issues as they related to service delivery, and to plan a cohesive approach to influencing the resolution of local service delivery issues. Such discussions served to further communications among agency personnel and fostered the development of relationships, enhancing the probability of continued interagency collaboration concerning a range of issues.

Participants

Trainees. Professionals participating in the training program were full time employees of various service delivery agencies in the four communities engaged with the project. A total of 24 professionals participated in the program, with an average of five participants from each community. These professionals included private and public health nurses, child health and development workers, school psychologists, a director of special education services, a director of a local mental health center, social workers and parent trainers for the state regional facility for the mentally retarded, a Head Start handicapped coordinator, a high school teacher of early childhood development, a local school system special education teacher, regional directors from the Governor's Office of Child Development, and a local school system social worker from the special education division.

Participants' educational backgrounds ranged from completion of high school through Master's level training with additional continuing education credits. Professional experience at the beginning of training program participation ranged from none to over 20 years. Participants included one male and 23 females who range in age from 21 years to over 50 years.

Trainers. The training program coordinator position was a part-time (60%) position. Two individuals filled the position during the model development phase of the project. The training coordinators had Master's level training in either child development or special education. Each coordinator had a minimum of three years teaching in parent-mediated educational programs for infants with handicaps and experience in inservice training, program development and program coordination.

Program Structure

Content. The content of the training program was determined through informal surveys, addressing information and competency needs, conducted with preschool special education teachers and teachers involved in parent-mediated infant educational programs. The FIT Project training coordinators' experiences as teachers with handicapped infants and their families also provided a basis for some decisions concerning content. The results of the informal surveys in relationship with overall project goals and training program goals led to a focus in seven areas of training. These areas of training and the general objectives within each area can be found in Table 1.

The objectives within each content area generally addressed acquisition of minimum skills and information necessary for effective intervention with handicapped preschool children and their families. Specific objectives and competencies within each area were developed relative to the needs and expertise of individual participants and the individual groups of participants from each community. The constellation of professionals (and agencies represented) in each group influenced the individual group's special needs regarding training. For example, one group had greater representation from public health and child health and development than the other three groups. This group had less need for training in developmental screening than the other groups, and had a greater need for training in educational programming than some of the groups. The training program was modified to fit the specific needs of each community group within the overall goals of the program.

Schedule. The training program schedule was designed with consideration of several program and community variables. The minimum of information and competencies deemed necessary for providing quality comprehensive services to handicapped children and their families was substantial. It was anticipated that participants would be skilled, practicing professionals seeking additional specialized training. Consideration of the program goals and content relative to the anticipated participants led to the conceptualization that a nine month program of weekly activities was adequate for trainee acquisition of skills and information needed for service delivery. Project staff realized that a nine month program of weekly activities was an extensive commitment of time required from agencies for staff participation. Though no fees would be charged, agencies were being asked to provide paid release time to their staff for the equivalent of 2 1/2 days per month for a period of nine months. However, the depth and breadth of proposed training, in combination with expected trainee achievement and the opportunity for "free" inservice training for staff enhanced agency receptivity to the time requirements.

The training sessions were designed in a format of four-week cycles. Each cycle was comprised of a three hour session in the local community, a full-day session typically held at George Peabody College in Nashville, a three hour session in the local community, and a practicum assignment to be carried out in the professional's job or elsewhere in the local community. Thus, the professionals were involved in training sessions three of every four weeks, then practiced independently during the fourth week. The activities of the four-week cycle were designed to provide exposure to an array of training experiences and resources.

Each three hour session in the local community consisted of a two hour seminar, and a one hour practicum with the children in the

Table 1

Training Program Content Areas

Content Area	Objectives
Infant and Early Childhood Development	Increased knowledge of development in the following domains: 1. sensorimotor 2. cognitive 3. motor 4. language/communication 5. social/adaptive.
Child Measurement	Acquisition of information regarding differences between screening, assessment, and evaluation functions and instruments. Acquisition of skills and/or information regarding 1. developmental screening. 2. educational assessment. 3. psychological evaluations. 4. vision and hearing screening.
Educational Programming and Curriculum Development	Acquisition of information concerning development and implementation of a general curriculum of activities. Acquisition of information and ability regarding development and utilization of equipment and materials appropriate to curriculum and individual programs.
Parent Training	Acquisition of abilities and skills in the development, implementation and evaluation of strategies and techniques in helping parents to 1. learn to be the primary teacher of the child. 2. effectively utilize family, neighborhood, and community support systems.

Table 1 (continued)

Content Area	Objectives
Parent Training (continued)	Acquisition of information and skill concerning leading parent groups. Acquisition of basic counseling skills.
Community Liaison	Development of techniques and strategies for most effective utilization and facilitation of interagency and family systems. Acquisition of knowledge about organizational structures and their influences on the types of service delivery systems and possible responsiveness concerning the target population. How to secure community support and funding for service delivery.
Influence of Handicapping Conditions on Development	Acquisition of information concerning cerebral palsy, mental retardation, visual impairment, specific handicapping conditions such as: 1. influence of handicapping conditions on functional ability 2. relationship between conceptual development, teaching strategies and specific handicaps.
Educational Intervention Strategies	Acquisitions of skills and knowledge regarding 1. teaching-testing-teaching techniques, 2. behavior management techniques, 3. observation of child-environment interaction.

Project's educational clinic. This seminar-practicum session provided a didactic-experiential mix that allowed professionals to practice application of seminar discussion topics under the supervision of project staff. The full-day session in Nashville permitted trainees to participate in lectures and workshops conducted by a variety of program consultants and guest speakers. Also, participants were exposed to an array of programmatic resources and information about the operations of other programs during this full day session. The independent practicum assignment allowed professionals the opportunity to practice specific skills or to apply and integrate newly developed skills into their jobs. It was expected that the diversity of training experiences would enhance the effectiveness of the training program

Program Operation

Seminars. As stated above, each three hour training session was divided into a two hour classroom presentation followed by a one hour supervised "hands on" activity carried out with the children in the FIT clinic. The two hour seminars were designed primarily for the presentation of theory and relevant research, in conjunction with discussion of concepts and background information needed for a firm understanding of the topics. Seminars also included information concerning application of the theory and research presented and handouts on related classroom or home activities.

Typically, seminars were planned and presented by the training coordinator. However, in light of the extent and the diversity of the experience of the trainees, ample time was allowed for discussion. In most instances, trainees were able to add to the depth and breadth of any presentation by sharing their knowledge and experiences with the other members of the seminar group. In some cases, a trainee presented a seminar (or a series of seminars) in his/her area of expertise. This added substantially to the feelings of co-ownership of the program and co-responsibility for the curriculum and for the accomplishment of program goals.

Once every four weeks, the trainees from all currently operating training programs came together for full-day large group sessions. This feature of the training program proved useful for three reasons. First, the Peabody-Vanderbilt campus was a centrally located site brimming with excellent resources in areas such as early childhood development, special education approaches and intervention strategies, child measurement, and the like. In addition, bringing all trainees together allowed the use of consultants as guest lecturers to the maximum effeciency by having them speak to all trainees at one time. The third beneficial aspect of bringing together all trainees was the opportunity it presented for the trainees to become familiar with each other and to use each other as resources. A feeling of comradery quickly developed when the professionals realized that their problems regarding services to children with handicaps were sometimes unique when compared with those of professionals from a large city, but were in no way unique when compared in discussions with professionals from other rural areas. Frequently, a problem-solving session developed spontaneously among the trainees from the different communities. Also, when the time came for the communities to begin to seek funds for locally supported preschool programs, a healthy competition developed among the groups of trainees in their efforts to establish their own programs. At the same time, trainees demonstrated a willingness to share their successes and mistakes in order to help the other communities to progress in their efforts.

Practicum. The practica experiences planned for the trainees were built into the training program in two ways. One practicum was a one hour supervised "hands on" experience in the FIT clinic. The other practicum was an independent assignment session scheduled into the four-week training cycle on a rotating basis.

The one hour supervised practicum in the FIT clinic provided the trainees with the opportunity to apply the theory, research, and techniques discussed during the seminar. Participants, in the beginning, usually spent the hour observing the training coordinator and infant-parent teacher working with the children. The first weeks also were spent in casual play that allowed the trainees to become familiar with the children and to appreciate their unique personalities. As individual trainees gained confidence, each began to carry out activities that the infant-parent teacher had planned for the child. To the extent possible, trainees were given feedback on their individual performances. In the last phase of training, each trainee was able to plan and conduct activities with the child with whom he/she had been working on a consistent basis. Activities were reviewed by the infant-parent teacher and, for the most part, were related to the topic discussed in the preceeding seminar. Trainees moved through this process on their own time-table, determined by their own needs.

The second type of practicum experience occurred once every four weeks in the training cycle in lieu of the seminar. This practicum was carried out independently and was not supervised by project staff. These practica experiences encompassed a wide variety of activities. One of the activities included trainee visits to various regional agencies that provided services to persons with handicaps. Often, these visits were suggested and arranged by the trainees. Other practica were assigned by the training coordinator and included activities such as administering a screening instrument, developing an educational program based on a hypothetical evaluation, writing a task analysis and other relevant experiences. The practicum assignment was discussed in the seminar conducted the following week.

Often, trainees chose to meet together in the absence of the training coordinator to work on practicum assignments. These occasions proved to be particularly useful to the professionals as it gave them additional time to meet and discuss concerns such as obtaining additional services for children and families, developing their own locally funded programs, and issues of interagency coordination.

Materials. A variety of materials were obtained to enhance the quality of training by increasing the depth and breadth of information presented during the course of the program. Perhaps the single most important feature developed was the training library. Because the communities on which FIT impacted were small and located long distances from urban areas of significant size, there was a great need to provide the trainees with easy access to current literature on topics related to infant intervention and parent counseling. The library consisted of books, journal articles, newsletters, curriculum guides, and other pertinent materials. Since materials were transported in a large suitcase from site to site, the attempt was made to provide a sampling of reading in many areas. Number of materials and their size and weight was a limiting factor. Trainees were encouraged to sign the books out and return them within a reasonable length of time. The library proved to be very popular and was well used by the professionals.

In addition to the books available in the library, trainees were provided with extensive reading lists in content areas covered during the seminars.

Another feature that initially seemed insignificant but proved to be of importance was the training notebook. At the introductory seminar, each trainee was provided with a hardcover, three ring binder that included blank paper for note-taking and was organized according to the different content areas of the training program. During each seminar, participants collected and placed the reading lists, handouts, notes, and other materials in the appropriate sections of the notebook. Trainees appeared to value these notebooks highly. They always carried them when involved in FIT activities and they reported that they often referred to the materials in the notebooks when working with special children outside of the FIT clinic.

Many handouts were distributed to the trainees. For the most part, handouts contained suggested activities for working with children, positioning and handling suggestions, developmental milestones for each area of development, reading lists, and summary information to assist trainees in understanding and retaining information presented in the seminars. Additional handouts included items concerning special equipment resources, guidelines for federal program funds, sample child measurement reports, and information about parent needs and experiences.

Other materials used in the training program consisted of videotapes borrowed or purchased from other projects and agencies. The videotapes were especially helpful in seminars addressing assessment, sensorimotor development, motor development, and parent counseling. Often, substantial amounts of new information were being presented and the opportunity to replay or stop the tape allowed for greater integration and understanding of information. Many lecture topics were enhanced greatly with the visual examples in the videotapes.

Community Resources

As already noted, the project made use of resources within the communities in a variety of ways. The fact that the training program drew together qualified representatives from various service agencies allowed local professionals opportunities to share information, coordinate services for children enrolled in the FIT clinic, and provide temporary services to those children and families on the FIT waiting list who otherwise would have been without services. Visits to various local and regional service agencies allowed the trainees opportunities to learn about additional resources for children and families in their geographic area, as well as consultation and training resources for themselves.

The practice of using participating professionals as seminar lecturers in their areas of expertise and the sharing of ideas during seminar discussions was another valuable use of community resources. This strategy helped the participants become aware of the expertise available within their own community and increased the feelings of ownership of the project and responsibility for FIT Project children and families.

Communities provided many resources (in addition to children and professionals) which were considered to be "in kind" contributions. Churches provided a facility for the concurrent operations of the training program and educational clinic. Other community resources used by the project included educational materials and equipment provided by local school systems, Associations for Retarded Citizens, and civic organizations. Transportation needed for families was donated by Senior Citizens, Rural Health Care, and other community organizations. Varied uses of community resources proved to be important aspects of each community's efforts to develop and fund a local program for preschool children with handicaps.

The utilization of community resources was significant in effecting participants' views of their own roles in the project. Community contributions created feelings of pride and appreciation for what their own community had to offer and could accomplish with a little encouragement and guidance from an outside resource.

Evaluation Strategies and Results

Evaluation concerned both program and participant dimensions and provided formative and summative information. Participant dimensions included the acquisition of information and skills and change in the number of preschool children with handicaps served as well as the types of services provided by the professionals. The program dimensions included the relevance of seminar topics, practica and materials used and the effectiveness of seminar presentations.

Participant Evaluation

Prior to beginning training, all participants were required to complete a statement about their individual goals regarding their participation in training. Individual trainee skill acquisition was evaluated according to the goals delineated by the participant. A Competency Assessment Scale (see Table 2) was used in evaluating skill acquisition. Assessments were completed by the individual professional and the training coordinator and, subsequently, reviewed by both. Following the review, each professional and coordinator discussed the assessments, then the completed forms were returned to the professional. The information obtained in the competency assessments was gathered primarily for the benefit of individual trainees. No systematic procedures were established for collecting data for project use. Consequently, no results from this scale can be reported here. The scale is included, however, as a potentially useful tool for program evaluation as well as individual assessment.

Table 2

PROFESSIONAL COMPETENCY ASSESSMENT RATING SCALE

Family, Infant and Toddler Project
George Peabody College of Vanderbilt University

Name______________________ Location______________________
Profession______________________ Date______________________
Evaluator______________________

Rating Scale:
0 Item not applicable
1 Unsatisfactory
2 Below average
3 Average
4 Above average
5 Excellent

1. Demonstrates understanding of infant and child development.	0 1 2 3 4 5
2. Demonstrates understanding of specific handicapping conditions.	0 1 2 3 4 5
3. Demonstrates ability to set training goals for the	
a. child.	0 1 2 3 4 5
b. parents.	0 1 2 3 4 5
c. extended family.	0 1 2 3 4 5
4. Demonstrates ability to prioritize training goals appropriately for the	
a. child.	0 1 2 3 4 5
b. parents.	0 1 2 3 4 5
c. extended family.	0 1 2 3 4 5
5. Demonstrates ability to determine specific learning needs of the child.	0 1 2 3 4 5
6. Demonstrates ability to implement psychoeducational prescription.	0 1 2 3 4 5
7. Demonstrates ability and understanding of child management techniques.	0 1 2 3 4 5

Table 2 (continued)

8. Selects and uses appropriate instructional materials with the						
a. child.	0	1	2	3	4	5
b. parents.	0	1	2	3	4	5
c. extended family.	0	1	2	3	4	5
9. Demonstrates ability to teach the following curriculum units:						
a. Gross motor development.	0	1	2	3	4	5
b. Hearing and speech skills.	0	1	2	3	4	5
c. Nonverbal communication.	0	1	2	3	4	5
d. Eye-hand coordination skills.	0	1	2	3	4	5
e. Manipulation skills.	0	1	2	3	4	5
f. Cognitive skills.	0	1	2	3	4	5
g. Verbal and gestural imitation.	0	1	2	3	4	5
10. Demonstrates sensitivity and responsiveness to the needs of the						
a. child.	0	1	2	3	4	5
b. parents.	0	1	2	3	4	5
c. family unit.	0	1	2	3	4	5
11. Demonstrates sensitivity to how having a child with handicaps can influence parents and family life.	0	1	2	3	4	5
12. Demonstrates appropriate counseling skills in working with parents and families.	0	1	2	3	4	5
13. Demonstrates ability to help parents learn to be the teachers of the child.	0	1	2	3	4	5
14. Works positively with other professionals.	0	1	2	3	4	5
15. Demonstrates ability to locate information and needed resources in meeting the needs of the child and family.	0	1	2	3	4	5
16. Demonstrates awareness and sensitivity to own teaching-learning style, and self-limitations in serving children and families.	0	1	2	3	4	5

Comments:

Pretraining and posttraining data were gathered from participants regarding the families on their agency caseloads with preschool handicapped children. Upon entering the program, professionals were asked to complete a frequency survey of the services provided to handicapped children and their families during the previous two months. The participants were asked to complete the same survey upon completion of the training program, then at the end of the third and final year of the project. The results of analysis of the pretraining-posttraining survey data for eight professionals can be seen in Table 3. Analysis of the data gathered in the final survey conducted at the end of the project is currently in process.

Table 3

Frequency of Allied Professionals Reporting Percent of Families with Retarded Children to Whom They Provided Services.

Services Provided	Percent of Caseload				
	0%	25%	50%	75%	100%
Developmental Screening of Child					
Before Training	6			1	1
After Training	4				4
Educational Programming for Child					
Before Training	6	1			1
After Training	2	2			4
Suggesting Instructional Materials to Use with Child					
Before Training	1	1			1
After Training	2	2			4
Parent Training					
Before Training	6	1		1	
After Training	2	2			4
Parent Counseling					
Before Training	6		1		1
After Training	2	2			4
Diagnostic-Prescriptive Teaching with Child					
Before Training	6	1			1
After Training	2	2	2	1	1
Locating Community Resources to Meet Child's Needs	5	1	1		1
Before Training	5	1	1		1
After Training	2	1	1		4
Locating Community Resources to Meet Family's Needs					
Before Training	5	1	1	1	
After Training	2	1	1		4

The extent of participant acquisition of information was assessed on two different occasions using a pretest-posttest design. Two instruments were developed by the training coordinator for use in these assessments. One instrument addressed material presented during the first half of the training program and was administered both in the beginning and approximately midway through the program. The second instrument was administered midway through the program and at the end of the nine months of training. The second instrument included some material from the first part of the training program as well as material presented during the latter part of the program. Analysis of pretest and posttest data for the first module instrument, using a one way analysis of variance for repeated measures, indicated significant change in information acquisition for two of the four training groups (F = 13.36, df = 4, $p < .05$; F = 8.73, df = 6, $p < .05$). The analysis of data for the remaining two community groups for the first module, and second module data for all four community groups is in process at this time. The data from the first two groups for the first module indicate that the participants did increase their understanding and acquisition of information presented in the training program. Sample items from the two instruments are shown in Table 4.

Table 4

Sample of Content Assessment Tests Items

I. Please answer the following questions by indicating whether the answer is True or False.

______1. Many children with cerebral palsy also experience difficulties in speech development and may have visual impairment related to cerebral palsy.

______2. In setting our expectations of parents, our major consideration should be the effectiveness of the educational program for the child.

______3. Motor development follows a predictable head-to-foot pattern and goes from mass to specific activities.

______4. It is as important to consider a child's affect (feelings) as well as cognition in developing the child's educational program.

II. Please fill in the following blanks.

5. Name two screening tools that can be used with infant and toddler functioning children.

a. ______________________________
b. ______________________________

6. Name six schemes of sensory motor development.

a. ______________________________
b. ______________________________
c. ______________________________
d. ______________________________
e. ______________________________
f. ______________________________

7. Name four ways of working effectively with parents of children who have handicapping conditions.

a. ______________________________
b. ______________________________
c. ______________________________
d. ______________________________

Table 4 (continued)

III. Please circle the correct answer(s).

8. Skill development in the young handicapped child
   a. happens with periodic involvement in a structured program.
   b. is the result of repeatedly engaging the child in a variety of carefully planned experiences.
   c. just happens.
   d. a. and c.
   e. all of the above.

9. Materials
   a. are usually appropriate as is on the market for the visually impaired, multi-handicapped child.
   b. usually tap only one or two areas of skill development.
   c. need to be adapted to meet individual learning needs.
   d. b. and c.
   e. all of the above

IV. Please indicate the age range within which infants and toddlers usually acquire and demonstrate the following behaviors. Indicate by circling 1 of 3 choices following each behavior.

10. Names object by function or use.
12-18 months 9-12 months 2½-3 years.

11. Follows moving object with eyes.
4-6 months 2-3 months 1-2 months

12. Begins to use pincer grasp for objects.
6-8 months 8-10 months 10-12 months

13. Unscrews lids.
9-12 months 12-18 months 18-24 months

V. In the following situations, please describe an adaption, modification or change which could result in more efficient and effective teaching/learning.

14. You are sitting behind a visually impaired child, talking to the child and encouraging the child to reach above and in front of her head to find a rattle as an activity for visual attention.

15. A child you are working with is learning to walk but is having some trouble with balance. You are standing behind the child, holding both of the child's hands above her head in assisting her in learning to walk.

16. Name four steps of a precision teaching approach:

1.____
2.____
3.____
4.____

VI. Please order these behaviors in a developmental sequence, numbering the behaviors 1, 2, 3,.....in the correct order.

_____Find object hidden under single screen.
_____Vocalizes in response to cooing sounds.
_____Imitates unfamiliar sound patterns by gradual approximation.
_____Drops or throws objects with no visual monitoring.
_____Shows objects (does not give) to others.
_____Stirs with a spoon in a cup.
_____Makes simple detour to obtain an object out of reach.
_____Uses stick as a tool to obtain an object out of reach.
_____Can walk backward.

17. Write up a task analysis for having a child drop a ball in a container (include a minimum of 5 prerequisite skills in sequence in your task analysis).

Program Evaluation

At the end of each seminar, participants evaluated the seminar for its content and the manner of presentation (see Table 5 for seminar evaluation form). Four items of the evaluation form were presented in a 5-point likert format; open-ended response opportunities were provided concerning the best parts of the seminar and suggestions for improvement. In addition, trainees were asked to evaluate the seminar relative to their experience at the time, and were provided an opportunity to make additional comments. Generally, participants rated seminars very highly on the likert format items with response opportunities ranging from most negative (1) to most positive (5). Collapsed mean ratings on these four items for three of the four communities at the end of the second year of the project were the following: 1) usefulness of information (4.35); 2) understandability of presentation (4.37); 3) organization (4.29); and 4) interest level (4.47). The completed evaluation forms were reviewed regularly by the training coordinator and subsequent seminars were modified according to the evaluative information. Professional positions were identified on the individual rating forms so that information about the relevance of topics in relation to specific professional needs would be available for retrieval.

Table 5

Seminar Evaluation Rating Form

Date________________________ Your Position________________________

Seminar Topic________________________ Location________________________

1. I found the information of this seminar to be

1 2 3 4 5

Not useful — Very useful

2. The presentation was 1 2 3 4 5

Difficult to understand — Easy to understand

3. The seminar was 1 2 3 4 5

Disorganized — Well organized

4. The way the information was presented was

1 2 3 4 5

Not interesting — Interesting

5. This experience has been

________a. worth the time spent

________b. too long

________c. too short

6. The best parts of this seminar were:

____

7. The seminar could be improved by

____

Additional Comments:

____

Another method of evaluation was the collection of attendance data. Attendance was remarkably high in view of the facts that all the trainees were full-time employees of service delivery agencies; while given release time to participate in training, they were not given relief from their full caseload of responsibilities. The median average attendance for 24 participants at the end of the second year was 69% - 71%.

The training coordinator maintained anecdotal records on all training sessions as a means of monitoring and reporting activities, political climate, community dynamics, and successes and failures of training activities.

Generally, evaluation results indicate that this type of program may be effective for specialized inservice training with rural area professionals. In addition to participants evidencing increased knowledge (content assessment), they also perhaps indicated experiencing this program as generally effective in meeting their needs (attendance, seminar ratings).

Special Problems

No one likes to admit openly to mistakes or to make shortcomings public. However, the mistakes made in the training program are presented here humbly in hopes that these same pitfalls can be side-stepped, or at least anticipated by other engaging in similar activities.

The universal problem of developing a curriculum which will meet the needs of all individuals within a group seemed magnified in the FIT training program. By drawing representatives from a wide variety of agencies, it seems that there was an increase in the diversity of the background experiences and skills and knowledge of the individuals within the training groups. As explained elsewhere, this problem was handled and partially solved by occasionally asking a trainee to conduct the seminar, also by encouraging trainees to share their own relevant experiences with the group. The word "relevant" is the key here. What, on the one hand, was a strength sometimes turned into a weakness when sessions which began as an informative sharing of ideas became sidetracked, or even derailed entirely, and degenerated into social meetings or competitions to see who had worked with the most difficult family.

When an open forum of the type in this program is being encouraged, it is very important that the trainer have the group leadership skills to keep the group on-task. Also, sharing the ownership of the program increases the trainee's feelings of responsibility in accomplishing program goals (and thus, perhaps keeping on-task).

In looking back, it seems that a more formal needs assessment would have been very helpful. The trainees were asked informally what subjects they were interested in covering in upcoming seminars. Few suggestions were given by the trainees. A more structured instrument may have given the trainees a clearer picture of what topics were possible and may have helped them to better organize and evaluate the usefulness of each topic for their own work.

Coordinating the one hour practicum in the FIT clinic was a challenge during the first year of the project. There were often more professionals than children present, and trainees were shy about being observed while working with the children. Also, walking out of a two hour seminar and immediately into the children's group allowed no transition time for trainees to become familiar with the child's activities for the day or to find out what the child's behavior had been for the morning. Until better procedures were established, trainees expressed a great deal of frustration about the lack of structure and transition time in the practicum.

Data collection always presented problems. There never seemed to be time to complete evaluation instruments. If forms were not completed during seminars, they often were never completed. The trainees typically had to rush off to their jobs at the end of the practicum, if not having to leave a few minutes before the end. It was difficult to request additional time from the trainees for filling out forms, particularly since they were busy, full-time service providers. Mailing evaluation forms to trainees did not work for gathering data; the forms seemed to find their way to the bottom of one of the infamous desk piles with which we all have some familiarity.

Communication between seminars sometimes was a problem. In addition to long distance charges for telephone calls between trainers and trainees, the trainees were involved with clients and "in the field" for entire days, even series of days.

These problems became less problematic when brainstorming occurred in open discussions about the difficulties, either during seminars or between the trainer and the individual trainees. When viewed in respect to the overall accomplishments of the training program in the communities and the individual achievements of the participants, they become relatively minor in comparison.

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TRAINING RURAL VOLUNTEERS TO DELIVER SERVICES TO HANDICAPPED INFANTS: THE D.O.T.S. APPROACH[1]

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The DEBT Outreach Training Staff (D.O.T.S.), a federally funded outreach project, was funded in 1977 to train personnel to develop home-based programs that provide comprehensive services for parents of young handicapped children. D.O.T.S. originated from DEBT (Developmental Education Birth to Two), a home-based teaching program designed to help parents secure the skills they need in working with their developmentally delayed/handicapped children. Originally funded in 1974 as a demonstration project by the Bureau of Education for the Handicapped (BEH), Project DEBT is now sponsored and supported by the Lubbock (Texas) Independent School District, under the auspices of the Department of Special Education.

The DEBT model was developed on the assumptions that early identification and intervention are critical; that parents are potentially the child's best teacher; that a warm and nuturing home is the best atmosphere for learning; and that parents can use community resources most optionally when supportive assistance is available. The objectives of DEBT, based on these assumptions are 1) to improve the developmental progress of the infants served; 2) to improve parental interest and involvement in the parenting role; and 3) to integrate the Project into the community human service delivery network. DEBT is successfully achieving its objectives as was demonstrated when the Project received Joint Dissemination Review Panel (JDRP) approval in 1980.

The function of D.O.T.S., the outreach project, is to 1) replicate the DEBT model; 2) recommend a procedure for identifying young handicapped children in rural communities; and 3) provide a system for locating and utilizing services offered by state and community agencies.

The general purpose of this paper is to describe the activities of D.O.T.S., and, in particular, to delineate the procedures and techniques used in recruitment and training of volunteers. The purposes and functions of D.O.T.S. will be described first, and the specifics of the volunteer training strategies will be delineated and explained thereafter.

Volunteer Training: The Purposes

The training of volunteers has two major purposes. The first is that persons participating in the volunteer training acquire the basic competencies needed for identifying young handicapped children. Particular attention is focused on the early years. A corollary to this first purpose is that volunteers gain an understanding of the services available within the educational framework and system. The second purpose is that educators and volunteers become informed as to the services provided through the various state and local agencies. The assumption that handicapped infants are more likely to obtain needed comprehensive services (and thus increase their well being) if community caregivers are aware of the full spectrum services available to handicapped children and their families is the rationale for this approach.

The volunteers' training is composed of 1) preservice training; 2) field experiences at the DEBT Model site; and 3) on-site evaluation and data-based reports from the replication sites. Pre and post-tests are administered during the various phases of training in order to measure the competencies of the volunteers, as well as to evaluate the effectiveness of the training.

Volunteer Recruitment

Recruitment of volunteers is one of the major components of the D.O.T.S. service strategy. A campaign designed to increase community awareness of the need for volunteers is started via distribution of the DEBT Newsletter; in addition, an introduction of the purposes of the D.O.T.S. Program is made available to all interested community groups. Personal contact with each area's school superintendent and service providers is made routinely; these initial starting points serve the program well. Key contact people are identified and located, and DEBT presentation are arranged with PTAs, social and civic organizations, study clubs, and informal small group meetings.

The next step is to identify a group of individuals interested in participating in Outreach training. The most essential qualification for volunteer training is the love of children. Volunteers usually include parents of handicapped and non-handicapped children, grandparents, foster parents, nurses, teachers, social workers, retirees, and others. Each comes with his/her own area of expertise, thereby adding interest and variety to each training session.

Preservice Training

The preservice training, entitled "Getting to Know DEBT," is a comprehensive overview of and introduction to the DEBT model. Volunteers are educated in the topical areas of early childhood, handicapping conditions, assessment devices, educational planning/programming, and interpersonal communications. Each training session is approximately four hours in duration. In addition to these didactic, instructional sessions, the volunteers are able to supplement their training by checking out DEBT reference materials to review at home. The first session typically encompasses developmental milestones in children, high risk factors in parents and children, and medical terminology.

Child Development

In reviewing and introducing child development (as in any other area covered in D.O.T.S. training), it is virtually an impossible task to discuss fully a child's early years in a four hour session. D.O.T.S. has attempted to resolve this problem in part by developing a slide presentation which demonstrates the four major areas of child growth and development: gross motor, fine motor, personal-social skills, and expressive-receptive language. The volunteers bring with them a wealth of personal experiences with children, and, in conjunction with the slides, the volunteers are given the opportunity to discuss the developmental stages. Beginning with birth, each of the four major developmental areas are presented pictorially in order to highlight the prominent milestones. Didactic presentations and round table discussions accompany the slides.

Stress is placed on being accurate behavioral observers of children. Many volunteers request some type of guideline to use in differentiating "normal" from "abnormal" behavior in children. At this point in the training, we have found it beneficial to offer the criterion of "what looks 'normal' probably is," and the volunteers have incorporated this criterion as an acceptable standard. Although probably less than an ideal standard, we nonetheless chose it in order to get the volunteers to rely on their judgment and to sharpen their skills in behavioral observation. After further didactic training, the volunteers come to have a better data base and intuitive feel for discriminating "normal" from "abnormal" behavior. This distinction is emphasized as being context-dependent, viz., what is normal at one stage of development may be abnormal at another. A "normal" age range for each milestone is brought out through the volunteer experiences and via additional child development research material. D.O.T.S. trainers hand out a small sampling of developmental milestones, and each volunteer is requested to fill in the approximate age level that would be required typically for successful accomplishment of that task or behavior. This affords an excellent opportunity to discuss individual differences among children and allows the highlighting of the uniqueness and individuality of each child.

During the slide presentation, attention may be devoted to a particular milestone. In an attempt to teach the volunteers how to conceptualize the sequence of behavioral steps necessary to perform a particular act, volunteers are asked to give a task analysis of the skill at hand. It has been profitable to ask volunteers to demonstrate and describe simultaneously each sequential step required to reach a milestone. An example of this is to ask a volunteer to get into a sitting position to perform that behavior. Furthermore, this strategy demonstrates the fact that skills build on one another, and helps the volunteers better conceptualize the many individual skills and acts that are required to perform a more elaborate behavioral response.

In order to display the various forms of infant oral communication, a tape recording of children's language was made. The volunteers listen to differentiated cries, coos, babbles, laughs, vocal play, and verbal articulation of a three year old's sentences and questions.

In this manner, D.O.T.S. trainers attempt to point out discriminative vocal cues to the volunteers that will allow better understanding of preconversational speech.

Attention is then directed towards the D.O.T.S. training notebook, which contains a comprehensive child development scale. A variety of other child growth and development materials such as journals, resource books, and films are made available for inspection and supplemental study.

Practice in observing and interacting with children is begun at this stage. Each volunteer is assigned to watch a child with specific attention focused on observing many of the routine behaviors and skills. Then, they are asked to list the prerequisites necessary for accomplishing a particular task.

A word about the attitudes of D.O.T.S. trainers is appropriate here. In the first session, as well as throughout the training, our experience has been that a supportive, encouraging attitude is a tremendous asset to our program. The generous use of constructive feedback, positive reinforcement, and an oppenness to new experiences tends to facilitate volunteer participation and eagerness. Keep in mind that some volunteers find new training rather threatening; making the training experience a comfortable, positive one will surely increase their enthusiasm and intensity of participation. Patience and a sincere desire to help are certainly two most facilitative attributes.

High Risk Factors in Parents and Children

Vulnerable infants are defined to the volunteers as babies whose early appearing aberrant development is related to diagnosed medical disorders. Also, infants who have limited early life experiences are categorized as environmental risks. Infants presenting a history of prenatal, perinatal, and/or early development events suggestive of biological insult(s) to the developing central nervous system and which increase the probability of later aberrant development are classified as at-risk (see Tjossen, 1976, for further details).

This training session is composed of lecturers giving specific information about the four critical time periods (e.g., prenatal, perinatal, neonatal, and postnatal). The D.O.T.S. team has developed a high-risk checklist, and this is distributed to the volunteers. The volunteers are apprised about normal body proportions, mobility and movement patterns, shape, symmetry, color, and muscle tone in the young child. Environmental and external stimili influencing the development of these attributes are discussed. Comprehensive information is provided about factors known to contribute to perinatal loss and at-risk status in surviving infants. Sample case histories of children referred to the program are distributed to the trainees. This activity gives the volunteers exposure to and the opportunity for studying medical reports, socio-economic information, and educational data. This training experience has been found to be quite profitable in terms of helping the volunteers identify high risk factors in the child's background.

Medical terminology and educational jargon are discussed also. A glossary of medical-educational terms compiled by D.O.T.S. is distributed to the participants for use as reference materials.

Handicapping Conditions and Physical Management Techniques

The second session presents information about the characteristics and implications of prevalent handicapping conditions. Physical management techniques are discussed also during this session.

With the assistance of filmstrips, resource books, consultants, parents and DEBT-prepared materials, the D.O.T.S. team encourages an open and stimulating discussion about handicapping conditions. The purpose of the discussion is to provide accurate information about many handicapping conditions and to dispel myths that often surround "exceptional" children. Love Your Baby is used as a gentle yet informative resource to deliver the facts about handicapping conditions. The filmstrips from Mental Retardation: Causes and Preventions are viewed during this session. This restates and reinforces the information discussed during the lecture session.

The importance of appropriate physical management and the techniques used when handling a child are covered during this training session. Physical management tends to be an area in which volunteers initially are hesitant to attempt. The D.O.T.S. team provides structured experiences that enable the participants to acquire the basic competencies needed in teaching a physically involved child. The Neuro-Developmental Techniques advocated by Karl and Ruth Bobath are utilized. The objectives, guidelines, and intervention techniques are discussed and demonstrated by the D.O.T.S. team.

The implications of various handicapping conditions are explained to the volunteers. Knowledge is acquired concerning fluctuating muscle tone and dimensions of severity. The D.O.T.S. team demonstrates and explains positioning options, reflexes, effects of varying muscle tone, and the ingibition/facilitation of muscle tone. Volunteers participate actively in these demonstrations. With the use of a Raggedy Ann Doll, the D.O.T.S. team is able to depict visually appropriate handling techniques. Seeing what proper management can do to facilitate normal patterns reinforces the value of the printed materials. The important part of this training session comes in actual hands-on management for the volunteers.

As we mentioned, the volunteer's first experience with handling occurs with Raggedy Ann. Then, with the help of DEBT parents who are willing to let others hold and handle their child, the volunteers experience the differences in children's muscle tone. Specific vocabulary terms are stressed in this session since many of the words and phrases are unfamiliar to the volunteers. The medical nomenclature and glossary of terms in the training notebook are emphasized. Resource materials are displayed and are referenced many times during the session. If possible, licensed therapists are secured to attend this session so that they might share their expert information. Also, local physical therapists and/or occupational therapists are invited when available and mothers who have had extensive experience with their own child(ren) who are after valuable tips and advice.

Assessments

The third day of training focuses on the need for assessment and the procedures for doing so. Early diagnosis is stressed as important so that compensatory intervention techniques can begin immediately. The distinction between screening and assessment instruments is made and discussed. The variables to be considered when administering an assessment are covered and a variety of instruments are demonstrated by the D.O.T.S. team.

The purpose of the session on assessment is to provide the volunteers and/or parent(s) with information that will help them develop an appropriate educational program for the child. The DEBT Program has selected the Denver Developmental Screening Test and the Koontz Child Developmental Program for assessment devices. These two measures have been found to provide the information required by the DEBT teachers to develop the child's individualized educational plan (IEP). These measures can be administered by a parent and are observational in design and nature.

The D.O.T.S. team introduces and explains the procedures for administering, scoring, and understanding the results of each device. Detailed handouts have been prepared and are given to the volunteers to keep with their training notebooks. The volunteers "walk through" and practice the procedure and become familiar with the various items and questions of each assessment devoce. During this session, young children referred to the DEBT Program are brought into the training session. The volunteers are divided into pairs and administer the assessment devices to the children. This activity allows the volunteers to have "hands on" experience in the assessment of handicapped children. Additionally, the volunteers are encouraged to do practice administrations on their own. At the next training session, volunteers review comprehensive case studeis, interpret the test scores, and develop the child's IEP.

Educational Planning

As with many of the other training sessions, educational jargon may be new to the volunteers and the first agenda item is to explain terms and abbreviations. D.O.T.S. utilizes the special education lingo with the volunteers. The reason for this is that that the volunteers will come into contact with these terms frequently and thus need to understand the language. Also, a second purpose is to acquaint the parents with such terms so as to better prepare them for interaction within the school setting. Usually, the terms (e.g., IEP, ARC) are listed on a blackboard and each is explained.

At this point in the training volunteers have been through high risk factors, child development, physical management, handicapping conditions, and assessments. This session attempts to tie together all of the previously presented material by offering various samples of available curricula for working with a child. Demonstrations on how to use and extract ideas from each source are offered.

Books on specific handicaps are explored and activities with special children are reviewed. The task analysis approach is studied and implemented. The forms used by the DEBT Program are introduced, and selected aspects of the DEBT GOSPEL are reviewed. The IEP is explained and suggestions for writing the objectives and goals for each of the four major developmental areas are offered. It is stressed to the volunteers that while the IEP is to be used as a guide for the home teaching, flexibility is necessary. The importance of being flexible, depending on the child's needs during a particular visit, is emphasized.

Once the didactic components are covered the volunteers are presented with a case history of an anonymous child, complete with medical profile and assessment data. The volunteers usually are paired off and are given the assignment of either a high or low tone child. Complete records are reviewed. The volunteers then are asked to synthesize their knowledge about child development, the handicap, physical management, assessment, and the whole child in order to construct an appropriate sample educational plan for that child. The training session is titled "On Your Own", and the volunteers are left to venture out, explore and create a lesson for the child. The D.O.T.S. session leader is available to offer assistance, but volunteers are encouraged to discuss and experiment with ideas among themselves.

Communication Skills

The final session traditionally includes the volunteers in activities that encourage positive, supportive interaction with others. The objective of the session is to evoke discussion about attitudes toward the handicapped child, and to discuss parental involvement with the child. Emphasis is placed on the parents' role and the active part they have in their child's development. The volunteers are acquainted with the fact that parents are dealing with and working through a variety of conflicts and struggles in their daily interaction with their child. The volunteers are encouraged to view their roles as supportive and to provide opportunities and experiences for positive parental involvement.

The D.O.T.S. team has developed an informal attitude scale which has been used during this final session. The volunteers communicate their feelings and attitudes by reacting to the statements on the attitude scale. The discussion is geared to stress the differences in individual attitudes and needs. In this way, volunteers are assisted in gaining greater insight and understanding as to the types of responses, attitudes, and feelings which they potentially might encounter in their work with handicapped children and their parents.

Placement of Volunteers

Following the completion of the training program, the volunteers are placed in positions of service most fitted to their skills and desires. The volunteers'found to be most proficient at working directly with infants are assigned the duties of going into the homes. Other volunteers serve as spokesmen for the DEBT program, as coordinators for special projects, as public speakers and so on.

Those volunteers who work in the home with parents and infants are expected to accept the parents as full-fledged members of the transdisciplinary team that works with the child. The volunteers are encouraged to accept the parents for who they are and to establish a clear two-way communication system. The volunteers' role as home teacher is re-emphasized. The D.O.T.S. team's expectations for the volunteers, and the volunteers' responsibilities, are outline and summarized briefly. The volunteers then are assigneed individual children and the training sessions conclude with a DEBT-developed slide presentation entitled A Lonely Child.

The D.O.T.S. team continues to offer encouragement, to provide consultation, to promote community awareness, and to monitor the needs of the volunteers and the replication sites. By virtue of this continuous involvement, much of the well-known volunteer burn-out syndrome is eliminated. The volunteers' needs and competencies are evaluated routinely by the D.O.T.S. team. These evaluations are utilized in an attempt to match the volunteers' needs with the appropriate training experience and teaching strategy. In this way, volunteers are continuously updating their skills and reviewing indirectly the materials presented originally in the training sessions.

Additionally, monthly meetings are held at each replication site. The volunteer coordinator in each area is asked to organize the meeting, assign new children to the volunteers, collect assessment data, and to discuss any concerns that may have developed. Volunteers learn to work together and to provide the critical services needed in the rural area.

Each volunteer comes with their own unique talents and each takes to a family a combination of love, talent, knowledge, and concern. The volunteers have succeeded in increasing community awareness and in expanding direct services to handicapped infants in rural America.

Research and Evaluation

D.O.T.S. always has felt a strong commitment to research and evaluation. Realizing the necessity for presenting evidence of program effectiveness, D.O.T.S. has employed a vigorous research effort in an attempt to demonstrate and document the impact of its efforts. A variety of research strategies has been helpful to D.O.T.S. Standardization of forms and evaluation devices have streamlined the collection of data in general, and research efforts in particular.

One type of evaluation strategy is used for assessing the impact and effectiveness of D.O.T.S. training. Pre- and post-tests are completed by the volunteers, and statistical tests are run in order to detect statistically significant improvements in the scores. Simple paired comparisons t-tests usually suffice for this purpose. In addition, participants attending these training sessions also anonymously complete an information sheet which assesses personal (e.g., sex, race, age, etc.) and professional (e.g., education, numbers of years of experience working with handicapped children, etc.) data. Aside from compiling descriptive statistics on individuals trained in the sessions, this information will hopefully serve as a data base from which multiple regression equations and discriminant analysis functions can be derived. The ultimate purpose of these statistical maneuvers is to identify those variables which serve best as predictors of which volunteers will complete the training and eventually do the best jobs. This project is still under development.

Conclusion

Our focus in this paper has been to describe and delineate the strategies that we have employed successfully in the recruitment and training of volunteers. Our results with this model have been profitable, and we encourage other programs similar to ours to utilize our model or selected components of it. Volunteers can be a vast source of personpower in rural America, and we believe that we have devised an efficient strategy for training volunteers to be effective interveners in the lives of handicapped infants and their parents. D.O.T.S. would like to extend an invitation to others to correspond with us if we can provide further information on any aspects of our program. Please address all inquiries to:

DEBT-Outreach Training Staff
1628 19th Street
Lubbock Independent School District
Lubbock, Texas 79401
(806) 747-2641 Ext. 456

References

Tjosser, Theodore, D. Intervention strategies for high risk infants and young children. Baltimore: University Park Press, 1976.

The State of the Art Task Force has as its responsibility the collection and distribution of information related to effective strategies for delivering services to rural young handicapped children and families. During 1980 - 81, a series of monographs was undertaken by contributors across the country under the editorial direction of Patricia Hutinger. Contents of the first set of monographs (see back cover) reflects the most pressing needs of rural HCEEP projects. Other topics are under consideration by members of the Rural Network and will be forthcoming.

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OSE Project Officer, Sandra Hazen

June 1981
The Rural Network
Western Illinois University Press

Topics for the first series of Rural Network Monographs include:

- An Overview of Initial Survey Results
- Influencing Decision Makers
- Cost Analysis
- Parent Involvement
- Transportation
- Interagency Coordination
- Recruiting Staff
- Securing Funds
- Service Delivery Models

A Persistent Challenge:
Staffing Special Education Programs in Rural Schools

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Running head: Staffing Rural Special Education

Abstract

Historically, rural school districts have experienced limited success in providing for the needs of students requiring specialized services. This study assesses the adequacy of the rural special education labor pool in Washington by applying a process suggested by Helge and Marrs (1982). Results suggest that rural school districts face a worsening shortage of special education personnel due primarily to an inability to attract qualified personnel to rural regions. Consistent with previous results reported by Bogenschild, Lauritzen, and Metzke (1988), no significant difference in attrition rates exists between rural and urban special educators. A statistically significant difference ($p < 0.001$) in attrition rates does exist, however, between special educators and general educators working in rural areas. The paper also reports the results of interviews with special education personnel in 29 school districts and one educational service district that sought to identify successful strategies being used in rural school districts to: (a) improve their ability to attract special education personnel, and (b) lower attrition rates among special educators.

A Persistent Challenge:
Staffing Special Education Programs in Rural Schools

Rural schools have historically faced a persistent challenge in providing for the needs of those students requiring specialized services. In the U.S. today, the majority of unserved handicapped children continue to reside in rural areas (Reiff & Anderson, 1989). Studies that have examined this issue conclude that a shortage of qualified personnel is the most significant obstacle rural schools face in serving handicapped children (Helge, 1987).

Reasons that have been cited for the difficulty rural districts experience in recruiting and retaining qualified special educators include social, cultural, and geographical isolation (Casto, 1981; Helge, 1981, 1983; Helge & Marrs, 1982); lack of support services (Adelman, 1986; Casto, 1981); limited career mobility (Helge, 1983); and failure by colleges and universities to prepare future special educators for the realities of teaching and living in rural areas (Miller & Sidebottom, 1987; Reetz, 1988; Rydell, Gage, & Colnes, 1986; Smith & Burke, 1983). As a result, Miller and Sidebottom recently described the rural special education situation nationally as "near a crisis level" (p. 1).

Personnel issues have recently become the focus of a great deal of attention in states throughout the western U.S. that are currently experiencing rapid increases in public school enrollments. The state of Washington, for example, has registered enrollment increases in excess of 2% annually over the last five years. This rapid enrollment growth masks an even more precipitous increase in the number of special education students in the state. While general education enrollments increased 8.1% between the 1984-85 and 1989-90 school years, special education enrollments surged 21.2% over this period (see Table 1).

Insert Table 1 about here

This rapid school enrollment growth is not uniform across rural and urban counties[1] in the state. Between 1984-85 and 1988-89, enrollments in school districts in urban regions of the state grew at an annual rate of 1.8%, while those in rural counties increased only 1.3% annually (see Table 2). This difference is explained by the differing growth rates in general education enrollments. Over this four-year period, special education enrollments actually increased faster in rural than in urban regions of the state.

Insert Table 2 about here

The tremendous increase in rural special education enrollments has heightened concern regarding the adequacy of the state's rural special education labor pool in terms of both quantity and quality. In the past, states have typically responded to rural special education personnel shortages by lowering hiring standards and using underqualified personnel (Reiff & Anderson, 1989). This study is generated by concern that rapid special education enrollment increases in rural districts will only increase this problem and further exacerbate the chronic difficulty that rural school districts experience in recruiting and retaining qualified personnel in their communities.

Study Design

This study is built upon previous work by Helge and Marrs (1982) and Halpern (1982). The first paper concluded that any viable system for recruiting and retaining educators in rural areas must: (a) use forecasts of short and long-term needs that are based on variables such as attrition rates, number of children expected in various grades and programs, and types of handicapping conditions prevailing; (b) communicate these needs to the appropriate agencies; and (c) help link resources (e.g., universities with graduating teachers) with needs (e.g., school districts experiencing shortages).

This study attempts to incorporate each of these three elements. Special educators in Washington may be certificated in nine fields: (a) K-12 teacher, (b) elementary classroom teacher, (c) secondary classroom teacher, (d) administrative supervisor, (e) communication disorder specialist, (f) school psychologist, (g) social worker, (h) occupational therapist, and (i) physical therapist. The study develops supply-and-demand forecasts for each of these nine occupations, and disaggregates this information for nine separate regions of the state: (a) Olympic Peninsula, (b) Northwest Washington, (c) North Puget Sound, (d) South Puget Sound, (e) Southwest Washington, (f) South Central Washington, (g) Central Washington, (h) Northeast Washington, and (i) Southeast Washington.

These projections were then mailed to the special education directors in all 296 school districts in the state, the education committees in the Washington State Legislature, the Office of the Superintendent of Public Instruction, and all professional organizations in the state. Finally, each of the state's 16 public and private universities have been made aware of the employment record of their graduates[2] and, in order to provide leads on prospective special education personnel, school districts, at their request, have been provided with information detailing the source of training for all individuals granted special education certification in the state in the last five years, disaggregated by special education occupation.

Additionally, Halpern (1982) has issued a call for research that attempts to identify "any promising strategies being used in particular states or regions to make resources more readily available in critical areas" (p. 498). In order to gather such information, structured, open-ended interviews were conducted with special education directors in 29 school districts and one educational service district. Several of the rural school districts visited in the course of this study have implemented innovative strategies to meet the challenges of staffing special education programs. A second focus of this paper is to report on successful practices currently being used in these districts, and to offer recommendations of additional actions that could be undertaken.

While this study uses data from Washington, discussions with special educators in other states suggest that this is an issue of national importance. To the extent that the process and data developed in this study and the recommendations they have engendered are generalizable to other states, this work should prove helpful to others in developing a process for examining their own states' rural special education labor market.

Method

Subjects

This study uses certificated personnel data from all 296 school districts in the state for the four school years between 1984-85 and 1987-88. The Washington State Office of the Superintendent of Public Instruction maintains a census of certificated and classified personnel employed by every school district in the state. This census file contains a unique identifier for every individual; thus, it is possible to follow the careers of school personnel as long as they are active in the public education system of Washington. For all persons working for school districts in the state, this database specifies the district in which they are employed, the type of activity (e.g., teacher, counselor, occupational therapist) and program (e.g., special education, vocational education) in which they are involved and, in the case of teachers, whether they are teaching at the primary or secondary level. In addition to this information on an individual's primary assignment, the database also specifies the highest degree attained, state and year in which degree was received, certificates held, and the institution granting each certificate.

In order to gauge future demand for special education personnel, this study employs a cohort survival method to project state-wide enrollment increases for each of the state's 14 special education handicapping conditions (preschool developmentally handicapped, seriously behavior disabled, orthopedically impaired, health impaired, specific learning disabled, mentally retarded-mild, mentally retarded-moderate, mentally retarded-severe, multi-handicapped, deaf, hard of hearing, visually handicapped, deaf-blind, and communication disordered). Special education cohort enrollment data are not disaggregated by school district within the state database; therefore, it is not possible to use a cohort survival method to project special education enrollments by region. Instead, the study forecasts regional enrollment changes by using the state-wide figure for each handicapping condition.

Such numerical data alone, however, form an insufficient basis for analyzing an entity as complex as a state's special education labor market. Therefore, on-site interviews were conducted in 14 representative rural school districts, one of the state's nine educational service districts and 15 representative non-rural school districts[3] chosen on the basis of school district enrollment, student demographics, access to the state's 16 educator-training institutions, and district property wealth[4], a 181-question survey was sent to all of the state's school districts (with a return rate of 77.7%),[5] and a brief, five-item survey was sent to the colleges and universities that provide educational certification in this state (with a return rate of 68.8%, including all seven major institutions).

Procedures

The in-district interviews were designed to gather information and opinions that were of importance to district personnel, but that were not addressed in the written survey or could not be effectively communicated by a written format. Data were acquired from 62 structured, open-ended interviews conducted by one interviewer. The special education director in each district was interviewed first, with the selection of additional informants based on recommendations from the special education director. The individuals interviewed, in addition to the special education director in each district (29), included personnel directors (9), teachers (9), superintendents (7), educational cooperative special education directors (4), principals (2), a school board member (1), and a curriculum director (1).

The face-to-face interview sessions were informal in nature and guided by a series of 15 questions, one set for school district special education directors and another set for other personnel. The interviews with special education directors were typically one hour in length, although the interest of the participants in the topic and the degree of concern about future trends in their district often extended this time (a phenomenon which is also reflected in the high return rate for the written survey). Interviews with other personnel were usually completed in less than an hour.

The questions addressed to special education administrators attempted to gather data on: (a) their perception of the ability of the state's special education labor pool to meet their district's specific needs in each of nine special education occupations (4 questions), (b) factors contributing to the recent increase in special education enrollments (2 questions), (c) current barriers to staffing specific special education occupations in their district (1 question), (d) emerging trends in staffing special education positions (6 questions), and (e) successful strategies for attracting and retaining special education personnel (2 questions). The interviews with other personnel members were focused upon their perception of the desirability of working in the district's special education program and why individuals chose to enter or leave special education positions. Sample questions included: (a) "What are some of the things that people like about working in this district's special education program that make them want to continue working in these positions?"; (b) "Do you have an acquaintance who formerly worked in the district's special education program, but has since left? If so, where did they go and what were their reasons for leaving?".

Steps to reduce bias and error included efforts by the interviewer to convey and maintain a neutral position, verbal assurances of confidentiality and anonymity, and the use of a structured but open-ended guide. Extensive field notes were taken in each of these sessions, and additional comments were taped by the interviewer after each district visit and were later transcribed. Responses were coded to identify emergent themes in rural and non-rural school districts for each category of the interview guide.

The written component of the school district survey was sent by the State Superintendent of Public Instruction to the special education directors in each of the state's 296 school districts and the nine educational service districts. The Likert-type survey instrument sought data, disaggregated for rural and non-rural school districts, on the extent to which: (a) districts contract with outside agencies in order to provide special education services, (b) districts experience difficulty in recruiting and retaining an adequate number of qualified personnel in each of nine special education occupations, (c) a number of variables play a role in recruiting and retaining an adequate number of qualified special educators, (d) districts use various methods (e.g., flyers to universities, internships, out-of-state recruiting trips) to recruit special education personnel for the district, and (e) districts provide various induction programs for new special education personnel.

The survey of state colleges and universities sought to measure each institution's current production of special educators and its capacity to meet additional demands. Specifically, the instrument asked each institution to: (a) provide the number of special educators, disaggregated by occupation, that had been recommended for initial certification in each of the past three years; (b) assess if the institution's capacity to train special educators was being fully utilized and if not, what the institution's maximum capacity given existing resources would be; and (c) evaluate whether the institution's capacity to train special education personnel could be expanded in the near term, by how much, and what resources would be required.

Results

Rural school districts and educational cooperatives face a worsening shortage of special education personnel due to: (a) special education enrollments which have increased by nearly 4% annually; (b) difficulty in attracting qualified personnel to rural regions; (c) attrition rates among special educators (12.5%), which are double the rate for personnel in general education programs (6.3%); and (d) declining enrollments in special education training programs. Consistent with previous findings by Helge (1984a), both survey data and district interviews identify physical and occupational therapists and communication-disorder specialists as the occupations in which rural districts currently face the most critical shortage. Interview data from these districts suggest that a similar problem is developing with regard to school psychologists and teachers for severely handicapped, secondary behaviorally disabled, and preschool developmentally handicapped students.

Survey responses show that statistically significant differences[6] in staffing practices ($p < 0.001$) exist between rural and non-rural districts. While more than 60% of non-rural districts fill all special education occupations (except physical therapist) with school district employees, more than 60% of rural school districts in the state contract with other school districts or educational service district cooperatives to staff communication disorder specialist (CDS) and school psychologist positions and more than 75% of rural districts contract for occupational therapist (OT) and social worker services. Therefore, the pertinent comparison to be made in assessing relative success in providing an appropriate education for non-rural and rural children needing CDS, school psychologist, OT, and social worker services is between the quantity and quality of services available within non-rural districts and those that a rural district can purchase from other school districts or from educational service district cooperatives .

Special Education Enrollments

As outlined in Table 1, the state's special education enrollments grew by 5.4% in the 1989-90 school year. The cohort survival method used in this study projects that special education enrollments state-wide will increase by an additional 14% in the next two years. More than one-third of this increase is attributable to a projected 48% increase in the number of preschool developmentally handicapped students (from 7,960 in 1989-90 to 11,773 in 1991-92). Other handicapping conditions with projected two-year enrollment increases in excess of 20% include health impaired (44.0%), hard of hearing (33.0%), and multi-handicapped (23.7%) (see Table 3).

Insert Table 3 about here

Current state data do not allow these projections to be disaggregated into expected rural and non-rural increases. In the last four years for which data are available, however, rural special education enrollments have increased 10% faster than have non-rural special education enrollments (see Table 2). If this trend continues, rural special education enrollments can be expected to increase by nearly 16% in the next two years.

A major focus of the in-district interviews was the cause of skyrocketing rural special education enrollments. A large number of respondents pointed to the increasing number of dysfunctional families in rural areas and predicted that such schools will see a still larger number of students requiring special services in the future, with these youngsters requiring even more intensive help than is currently provided. Specific causes include an increase in substance abuse, latchkey children, transiency, poverty, emotional and physical abuse of children, and drug dependent babies.

In addition to a greater number of special education students, rural and non-rural school districts are seen as being faced with increasing difficulty in obtaining parental cooperation due in many cases of escalating volatility within families. Several interviewees pointed to a rising number of parents who are ill-equipped to deal with the situation in which they find themselves, and who turn to the schools for assistance. Unfortunately, greater mobility among the population has made it more difficult for the schools to develop close, lasting working relationships with parents. By default, schools in general (and special educators in particular) are seen as assuming a wide range of responsibilities previously carried by the home.

Attracting Special Educators to Rural Areas

Rural school districts and educational service districts that have attempted to recruit new special education personnel in the last four years report moderate-to-high difficulty in obtaining an adequate number of qualified applicants. Survey results from rural school districts and educational service districts show that the most difficult positions to fill have been physical and occupational therapist and school psychologist (see Table 4).

Insert Table 4 about here

Districts reporting difficulty in obtaining qualified applicants were asked to indicate the extent to which they believed certain reasons may have played a role in this problem. Survey results from rural school districts and educational service districts show that the increasingly complex nature of special education positions and the location of the district in a rural area were seen as playing the greatest role (see Table 5). While non-rural school districts also perceive greater complexity as having a significant role, they are significantly less likely ($p < 0.001$) to believe that their location is a major deterrent in obtaining staff members. An additional constraint suggested by interview data is that rural districts need individuals who are qualified in several fields. It is common for special education teachers in these relatively small districts to fill several unrelated assignments. Even those working within the special education field only must be prepared to work with students in varying grade levels, and possibly with preschoolers as well.

Insert Table 5 about here

The methods used to recruit needed personnel differ between rural and non-rural districts. While the majority of non-rural districts report that they recruit at universities (51%), conferences (62%), and career fairs (69%), less than one-third of the rural districts report using any of these approaches in the last four years. Instead, the majority of rural districts in the state depend solely upon written job descriptions posted in the district and sent to professional associations and universities in region.

Special Education Attrition

A major factor leading to strong demand for special education personnel is high attrition from the profession. Helge (1983) has reported that attrition rates of 30 to 50% are the norm for rural special educators. During the four-year period of this study, analysis of state personnel records shows that attrition among rural special educators was less than 15% in each year, and was not significantly higher than that experienced among special educators in the state's urban areas (see Table 6). This result is consistent with previous work by Bogenschild et al. (1988), which found no statistically significant difference in over-all attrition rates between rural and urban teachers.

Insert Table 6 about here

A statistically significant difference ($p < 0.001$) does exist, however, between attrition rates calculated for special educators and general educators working in rural areas. Several special education directors in rural areas noted that high attrition rates in the special education staff have inhibited the development of stable connections among school staff and between school staff and parents. In addition, while a certain amount of turnover among school staff was seen as inevitable, and indeed desirable, high rates of turnover within a program were seen by personnel directors as disruptive to special education program continuity and planning. Helge and Marrs (1982) have pointed out that constant turnover makes it virtually impossible to develop and implement long-range staff-development plans. This discontinuity is not only detrimental to student learning, but several districts also commented on the financial burden of added recruiting and hiring costs.

In interviews, the explanations given for why teachers leave a district differ between rural and non-rural districts. While explanations in non-rural areas centered almost entirely on the "burn-out" associated with special education positions, rural districts also identified the desire of young, single special educators to move to more metropolitan regions of the state; the excessive travel time required of special educators with assignments in several small, isolated school districts; and feelings of isolation with few opportunities to interact with peers at meetings and an accompanying loss of encouragement and support as central to their retention problem.

This dichotomy is also reflected in survey results for rural districts (see Table 7). The results parallel the reasons seen for difficulties experienced in attracting personnel to rural areas. A statistically significant difference ($p < 0.0001$) exists between the importance given to school district location by rural districts (1.9) and the importance perceived by non-rural districts (3.1)

Insert Table 7 about here

Hawk (1986-87) has emphasized the importance of support programs for new staff in retaining their services in future years. Survey results show that while 55% of non-rural districts provide mentors for special educators new to the district, only 27% of the rural districts provide such assistance. McIntosh (1989) points out the cost effectiveness of such programs. They require little financial support and yet can ease a special educators adjustment to a new school and community by providing both responses to questions about day-to-day activities, as well as emotional support through difficult times.

Enrollment in University Special Education Programs

Survey data from the state's colleges and universities show a 26% decline in the number of special education classroom teachers, and a 29% decrease in the number of school psychologists recommended for certification between the 1985-86 and 1988-89 school years. In order to provide the personnel needed in their special education programs, several school districts report that they have made extensive efforts to recruit out-of-state candidates. Rural school districts, however, have not been as successful in this attempt as have other districts in the state. Nearly 20% of the special educators hired during this period were trained out-of-state; survey results, however, show that while urban and suburban districts have been quite successful in recruiting special educators form California, Oregon, and Idaho, almost all special education personnel hired by rural school districts are trained in-state.

Discussion

The projected impact of the data outlined above is a matter of great concern in the districts visited during the course of this study. Nearly every district, without regard to size, wealth, or geographical location, has either already experienced a problem in employing an adequate number of well-qualified special education staff or anticipates such in the near future. Those districts that are not experiencing difficulties are located in metropolitan settings, have developed a state-wide reputation for their programs, work closely with universities, and recruit heavily.

Rural school districts are particularly vulnerable because of a combination of too few educators in the rural hiring pool and relatively high attrition among the state's special educators. Yet, several rural school districts visited during this study are achieving considerable success in meeting the increasingly severe challenge they face. The foci of these innovative approaches have been to: (a) improve the ability of their rural district to attract personnel, and (b) lower attrition rates among special educators.

In a modification of an approach reported by McIntosh (1986), a rural district visited during the course of the study has begun hiring regular education teachers already in community and has then provided resources (i.e., release time) to help these individuals obtain special education certification. School districts in south central Washington report great success in providing programs which encourage classified staff members to become certificated in the field of special education by providing tuition reimbursement and stipends for those already serving handicapped children. The largest program, which attempts to target bilingual and minority staff, is currently providing special education training to 18 classified staff. Several rural districts visited in the study are also successfully using an approach suggested by Berry and Davis (1978) in which paraprofessionals are used to provide more efficient use of certificated staff member's time. These classified staff are used extensively in direct work with students under qualified supervision and have been trained to properly execute much of the paperwork which formerly burdened certificated staff.

Kirmer, Lockwood, Mickler, and Sweeney (1984) have discussed the difficulties inherent in regional special education delivery systems. Two rural, remote school districts in northeastern Washington have found that the development of a "two-district coop" has permitted them to provide more desirable working conditions for their special education staff, which has improved their ability to attract qualified personnel to their region. This arrangement provides more effective scheduling of specialists' time and is less expensive than the districts' previous arrangement with a larger cooperative since they avoid the regional cooperative's surcharge. Difficulty has arisen, though, due to some conflicting language in the two school districts collective bargaining agreements. To avoid such problems, these districts recommend that, if possible, support specialists should be removed from the bargaining unit.

Approaches geared towards lowering the attrition rates among special educators have focussed upon avoiding the isolation that many special educators report experiencing in their positions. This problem has been addressed in one district by: (a) avoiding the placement of any special education classes in portables or in extremities of buildings; (b) delegating responsibility for the supervision and evaluation of special education teachers to building principals, with the special education director seen only as a resource; and (c) directing building administrators to set the tone in buildings that special education is part of the building program, not "a guest in the house."

Additional state-supported innovations are needed, however. Discussions with rural special educators and preservice students suggest that the low number of applicants for positions in rural school districts is a function not only of "a negative stereotype that makes working and living (in rural districts) seem unattractive" (Miller & Sidebottom, p. 3), but also of high recruiting costs which face both rural districts and potential candidates. Many rural school districts are geographically isolated from the colleges and universities which prepare potential applicants. In order to recruit personnel from these institutions, rural districts must either depend totally upon self selection for applicants (which may prove costly in terms of the quality and quantity of applicants from whom the district may select), or these districts must allocate the resources needed to support a recruiting effort. Applicants also face a relatively high cost in terms of time, and possibly travel expenses, if they are to acquire the information needed to make an informed decision about accepting a position in the district. The costs involved for both the district and the applicant are higher, on average, for rural school districts than for urban or suburban districts. States could "level the playing field," by providing financial incentives for students enrolled in special education programs in the state's colleges and universities to travel to rural school districts for on-site interviews.

In addition, Helge (1987) stresses the desirability of providing opportunities for prospective special educators to prepare in rural classrooms. Prospective rural special educators generally fall into three categories (Marrs, 1984): (a) Individuals who have grown up in rural communities and are interested in working in special education, (b)

Individuals who are place-bound in rural areas and are forced into teaching special education by circumstances, and (c) Individuals who accept positions in rural areas knowing nothing about ruralness. Marrs argues that this third group of rural special educators "will have greater personal as well as professional success" (p. 341) if their university training specifically prepares them to work with the rural handicapped population.

To begin to meet this need, the University of Washington developed a rural early-childhood, special education training program which was designed to assist prospective early-childhood special educators in understanding the challenges of providing specialized services in rural settings, using appropriate educational strategies and technological aids, and using available resources for personal and professional growth (Mills, Vadasy, & Fewell, 1987). The program required students to: (a) participate in weekly seminars that focused on issues of delivering services in rural areas, (b) learn to use appropriate technology, and (c) serve a four-week practicum in a rural setting to obtain first-hand intensive field experience. The program has recently been discontinued due to lack of funding. Similar programs, which include a secure funding source, should be developed in other special education programs and in other states.

In addition, Helge and Marrs (1982) contend that the first group of special educators--those who have grown up in rural communities--are most likely to remain in rural districts since they have goals, mores, expectations, and lifestyles similar to the families they serve. A promising vehicle for recruiting rural youngsters into special education professions, while helping to alleviate the current special education personnel shortage, would be state-sponsored future teacher clubs modeled after military ROTC programs. High school students would be provided opportunities to serve as salaried aides in special education classrooms. This recruiting effort could be further strengthened by implementing a system of loan forgiveness programs and/or university scholarships, including stipends for campus living expenses for students pursuing special education certification.

Casto focuses upon the need to improve the level of support services available to rural special educators. Relatively high levels of spending in rural school districts in Washington[7] makes feasible the introduction of advanced technologies which Helge (1984b) argues can at least partially ameliorate the professional isolation experienced by rural special educators. Technologies such as two-way satellite communication could provide rural personnel with direct access to technical assistance throughout the country and, perhaps even more important, connection to their peers in other rural school districts.

Conclusions

The general consensus among school district people interviewed in this study is that the shortage of qualified special education personnel in rural areas will almost certainly increase before any improvement in the situation can be expected. In 1987, Washington tightened considerably teacher certification regulations and, beginning in 1992, it will become one of the few states in the country requiring its teachers to earn a graduate degree in order to become eligible for standard certification. Special education directors interviewed in small and rural districts are particularly concerned about this proposed change in certification regulations, which they feel could severely limit their ability to compete with rural school districts in neighboring states for special educators.

Special education directors interviewed for this study are pessimistic not only about the number of likely applicants for special education positions, but there is also great concern regarding the quality of candidates. Even those districts currently in relatively strong recruiting positions report that while they can choose from a fairly good supply of well qualified staff members early in the hiring season, by the time the last person is hired, few (if any) properly qualified applicants are available.

In order to begin to recruit the large number of qualified special educators needed in rural districts, as well as to retain the services of the numerous talented individuals currently in these districts, creative and innovative methods for recruiting and retaining special education personnel members need to be developed and implemented. This paper reports successful practices currently used in rural districts to meet these challenges and offers recommendations of additional actions that could be undertaken.

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Footnotes

[1] Twenty-eight of Washington's 39 counties are considered to be rural in this study. These counties do not contain a region which has been identified as a metropolitan statistical area, as defined by the U.S. Census Bureau.

[2] Each university was provided with the following data:

1. The number of their graduates employed by Washington school districts in special education positions, disaggregated by occupation (e.g., the percentage employed as occupational therapists); by region (e.g., the percentage employed in the North Puget Sound region); by occupation by region (e.g., the percentage of their occupational therapist graduates who are employed in the North Puget Sound region); and by region by occupation (e.g., the percentage of their graduates employed in the North Puget Sound region who are working as occupational therapists).
2. The number of their new graduates employed by Washington school districts in special education positions, disaggregated along the same four dimensions.

[3] Non-rural school districts in this study are those districts that are located within 50 miles of one of the state's three primary metropolitan statistical areas, as defined by the U.S. Census Bureau.

[4] Representative rural (non-rural) school districts were selected by the following process:

1. Notation was made for each rural (non-rural) district as to its rank among rural (non-rural) districts in percentage of minority students, percentage of students who qualify for a free- or reduced-price lunch program, and assessed property value per pupil, and whether the school district was located within 50 miles of one of the state's 16 educational training institutions.
2. All rural (non-rural) school districts were sorted by October 1, 1988 enrollment and divided into 15 equal-sized groups (1/15 of the rural [non-rural] districts, rounded to the nearest whole number, were in the first group; 2/15 of the rural [non-rural] districts, rounded to the nearest whole number, were in the first two groups, and so on).
3. Within each group, the mean rank on the three variables and the percentage within 50 miles of a training institution was calculated.
4. If the majority of school districts in a group were within (more than) 50 miles of a training institution, the minority within the group on this variable were discarded.
5. The school district within each group with the smallest deviation between the sum of the district's rank on the three

> variables and the sum of the group's rank on the three variables was deemed to be the representative district in the group (if two districts equally deviate from the mean, then the representative district was chosen at random from these two districts).

One of the rural school districts provided no special education services and therefore an interview was instead conducted in the educational service district which provided these services.

[5] This abnormally high response rate to such a lengthy questionnaire can be attributed to: (a) high levels of interest by participants in the topic, combined with profound concern about future trends in their own districts; and (b) diligent efforts by the staff in the Superintendent of Public Instruction's Division of Special Services and Support Programs and in the state's nine educational service districts to make follow-up telephone contact with appropriate personnel members in school districts that had not returned the surveys.

[6] Data for this study were analyzed using the SAS General Linear Model procedure (PROC GLM) to carry out unbalanced analyses of variance on rural and non-rural school districts..

[7] Net expenditure per pupil (excluding transportation) in the state's rural school districts has soared from 22% above the state's average expenditure in 1974-75 to 55% above the state average in 1988-89.

Table 1

Washington State General and Special Education FTE Enrollments, 1984-85 to 1989-90

School year	General education FTE enrollment	Percent of change	Special education FTE enrollment	Percent of change
1984-85	636,324		66,223	
1985-86	641,387	0.80	67,562	2.02
1986-87	651,315	1.55	69,421	2.75
1987-88	661,218	1.52	72,632	4.63
1988-89	672,262	1.67	76,156	4.85
1989-90	688,092	2.35	80,264	5.39

Source: Washington State Office of Financial Management (1988, p. 4); State of Washington, Superintendent of Public Instruction, Report 1735.

Note: The 1989-90 general education enrollment figure is based upon unpublished data.

Table 2

Enrollment Changes in Rural and Urban Counties, 1984-85 to 1988-89

	Annual percentage change in rural counties	Annual percentage change in urban counties
Total enrollment	1.3	1.8
General education	1.0	1.7
Special education	3.9	3.5

Source: State of Washington, Superintendent of Public Instruction, Report 1041; State of Washington, Superintendent of Public Instruction, Report 1735T.

Table 3

Projected Washington State Special Education FTE Enrollments, 1990-91 and 1991-92

School year	Special education FTE enrollment	Percent of change
1989-90 (Actual)	80,264	5.39
1990-91	85,028	5.94
1991-92	91,444	7.55

Source of 1989-90 enrollment data: State of Washington, Superintendent of Public Instruction, Report 1735.

Table 4

Reported Degree of Difficulty in Obtaining an Adequate Number of Qualified Applicants, Rural School Districts and Educational Service Districts

Occupation	Degree of Difficulty
Physical therapist	1.9
Occupational therapist	2.0
School psychologist	2.0
Communication disorder specialist	2.2
Secondary classroom teacher	2.8
Elementary Classroom teacher	3.0
Social worker	3.0
Administrator	3.4

Scale: 1.0 = Great Difficulty, 5.0 = No Difficulty

Number of Districts Responding: 133

Table 5

Reported Importance of Various Reasons for Difficulty in Obtaining an Adequate Number of Qualified Applicants, Rural School Districts and Educational Service Districts

Reason	Importance
Increasingly complex types of services special education personnel are being asked to provide	1.5
Location of district	1.5
Salary offered	2.1
Limited recruiting resources	2.2
Location of training institutions	2.4
Working conditions	2.5
Physical amenities or facilities in school district	2.9

Scale: 1.0 = Significant Role, 5.0 = No Role

Number of Districts Responding: 133

Table 6

Attrition from Special and General Education Positions in Rural and Urban Counties, 1984-85 to 1987-88

	Special education			General education		
	Leaves	Total	Attrition	Leaves	Total	Attrition
Rural Counties	606	4,743	12.8%	2,408	37,686	6.4%
Urban Counties	1,279	10,316	12.4%	4,062	64,912	6.3%

Table 7

Reported Importance of Various Reasons for Difficulty in Retaining Qualified Special Education Personnel, Rural School Districts and Educational Service Districts

Reason	Importance
Increasingly complex types of services special education personnel are being asked to provide	1.7
Location of district	1.9
Salary offered	2.1
Movement into a regular education position	2.2
Working conditions	2.4
Physical amenities or facilities in school district	3.0

Scale: 1.0 = Significant Role, 5.0 = No Role

Number of Districts Responding: 133

1

2

3

4
5
6

Training support personnel serving rural students with disabilities

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Abstract

Many support personnel need information that will reduce their anxieties about working with students with disabilities. This article discusses the training needs of rural school support personnel (bus drivers, custodians, food service personnel, and school secretaries). These individuals need to develop an awareness of handicapping conditions in order to foster total school commitment in serving students with disabilities. Methods of maintaining a less restricted physical environment, basic skills for dealing with disabled students, and the specific responsibilities for each specialty area of service are addressed as training issues.

Introduction

Prior to 1975, students with special needs were excluded from regular classrooms in the public schools. Segregation was based on issues such as the belief that some were not smart enough, some were unable to climb school steps and board buses, some had differences in manner and speed of learning, and some showed behaviors which were distinct from their peers. Times have changed. PL 94-142, signed in 1975, stated that all children, including children with disabilities, have a right to a free and appropriate public education in the least restrictive environment. This meant that children who exhibited seriously disabling conditions would be attending public schools in increased numbers. Teachers were provided with inservice programs dealing with disabled students. The federally mandated Comprehensive System of Personnel Development (CSPD) program required yearly training.

Some of our most important school employees may not have received inservice. Who brings the mentally retarded child to school? Who calls a parent when he/she is sick? In many instances, school support personnel perform these and other routine tasks. These support personnel need training to understand the special needs of special students. Administrators need to ask when the school secretary, custodian, or food service worker was trained in working with physically disabled children, retarded children, or those with emotional problems.

This article provides basic information that teachers and/or administrators may want to share with support personnel in rural schools. All school personnel are required to serve students with disabilities, yet many are not aware of the definitions for various disabling conditions. It is our suggestion that the following definitions and general methods for dealing with students with disabilities be shared with support personnel.

Introduction to disability characteristics (in layman's vocabulary):

Deaf and hard-of-hearing

The child who is deaf cannot hear well enough to understand what someone else is saying, with or without a hearing aid. We say the child is "hard-of-hearing" when hearing is a severe enough problem to make school difficult, but is not totally deaf and may be using a hearing aid.

Blind and visually impaired

The blind child cannot rely on vision to learn about the world. The child who is visually impaired may be partially sighted, but requires more than glasses to succeed in school and move about in the environment.

Physically disabled

Physically disabled children may have many different problems. They may not be able to walk, use their arms, may have trouble breathing, or may be very weak because of a long-term illness. There are many other physical disabilities in addition to the few mentioned above. All require identification by a physician.

Severe mental retardation

Some children cannot learn to read or write, and may not learn to talk as a result of an accident, birth defect, or other cause. Through environmental damage or failure to develop in typical patterns, they are unable to learn these skills.

Mild mental retardation

Certain disabilities cannot be noticed merely by looking at the child's face or body. Some students do not have as much ability as the majority of their peers. This can be caused by a lack of educational opportunities, an accident, birth defect, high fever, or any number of other reasons. These children may not be identified as disabled until they are placed in a classroom situation and found to not perform at the same level as their classmates. When assessed, it may be determined that they function intellectually and behaviorally at a level below their agemates.

Emotionally disturbed/behavior disordered

Some students do not behave similarly to their peers. These children may stay away from other people and may not wish to talk. There are other students whom everyone knows because they disrupt the classroom regularly. Any of these students may be labeled emotionally disturbed if their behavior is so severe that they are unable to learn.

Speech impaired

There are students who cannot easily make themselves understood when they talk. Some may not look different from other children, but have trouble talking due to an inability to formulate words or clearly produce words.

Learning disabled

Some children are not disabled in any of the ways previously discussed, but have a lot of difficulty learning. They may not understand language, spoken or written, which may make listening, thinking, speaking, reading, writing, spelling, or completing mathematical calculations difficult. These students are called learning disabled (LD).

General needs of children with disabilities

How do children with disabilities affect the custodian, secretary, food service worker, and bus driver in rural schools? These support personnel come in contact with students every day, including the above mentioned special students. Frequently these students need additional help; all can be aided by acceptance and understanding.

Deaf and hearing impaired students may be able to read lips, so personnel can assist by making sure that their lips can be seen while talking. Some personnel may need or want to learn sign language to make transportation and other routine activities easier for these students.

Visually impaired students need large print, possibly braille, to read the names of food or notes about bus problems. Hallways need to be kept clear of items which might be obstacles.

Physically disabled students may need special transportation and ramps to get to school. While at school, they may need a special tray in the cafeteria and individual arrangements for use of the bathroom.

The severely retarded child may need extra supervision on the way to and from as well as during school. This child may not be able to follow verbal directions easily, requiring the involvement of all school personnel.

Students with mild disabilities may not need anything that is different from other children. However, extra effort might be necessary to understand them. Being patient will help these students become successful in school.

Support personnel may need to know about students' medical information in certain instances. Children with disabilities may be more prone toward illness than other students and some may experience a seizure. Seizures can present themselves in a variety of ways, depending upon severity. A petit mal seizure may last for a few seconds, consist of a very short blackout, and may not be noticeable. A grand mal seizure may involve wild thrashing of the arms, saliva may flow from the mouth, and the body may become rigid. A seizure can happen at any time or place–on the bus, in the hall, or lunchroom. Support personnel need to know what to do in such a situation before an incident occurs. We recommend that the following suggestions be posted in all areas where support personnel and students may come in contact with a seizure victim.

Suggestions in case of an epileptic seizure

- Remain calm.
- Keep the student from hitting against objects. Move the objects–do not try to restrain the student's movements because bones could be broken. (The most frequent injuries are caused by the student hitting against objects.)
- Loosen clothing that fits tightly.
- Turn the student onto his/her side.
- Do not put anything between the teeth.
- Do not give any liquid.
- Wipe saliva from the mouth with a tissue.
- Wait until the student is conscious. Be aware that the student may appear dazed and confused for a short period of time following the seizure.
- The student may be sleepy when the seizure is over.
- Let the student rest in a safe place.
- Assure other students that all is well.

Usually the individual will recover normally if he or she has not been injured in falling. School officials should be informed when a student has a seizure. Write down the time and how long the seizure lasted. If continuous seizures occur, the building administrator or designated representative should be notified to contact medical personnel and the parent(s).

The basic information needed by rural support personnel includes the characteristics of disabled students, skills for communication, and an understanding of medical information which may explain the student's behavior. We recommend that this information be provided through inservice (Davis, 1984).

Bus drivers

The requirements of PL 94-142 mandate certain responsibilities for transportation personnel. Below is some information for bus drivers (Land, 1984a, 1984b).

The responsibility for transporting students with disabilities has been given to the states by federal law. Transportation is one of the "related supportive services" required to assist a child with a disability who would benefit from special education. Many states have published school bus driver manuals, however, this alone may not provide adequate training for those persons dealing with the disabled. In rural schools, most students ride buses. Students with disabilities may ride adapted buses–vehicles specially designed for transporting wheelchairs and other mechanical devices–or the regular school bus. Bus drivers need to know the minimum standards for school vehicles transporting students with disabilities. These are found in the revised edition of *Standards for School Buses and Operations, National Minimum Standards for School Buses, National Minimum Standard Guidelines for School Bus Operations* (National Safety Council, 1980). The bus driver must be aware of techniques for loading and unloading students with physical disabilities. Some students may require additional time to move up the bus steps while others may have need for buses equipped with a power lift platform. If the driver has been trained in the proper procedures, appropriate use of the lift platform will help with the wheelchair and prevent the operator's feet from being entangled during the raising and lowering of the lift. Regardless of the type of vehicle used, the bus driver needs information about physical, mental, and emotional conditions of each student so that a safe ride may be assured.

Discipline and behavioral control are a major concern on all school buses. In order to maintain order, the driver must be able to direct students who may not communicate well. Nontraditional ways of giving and receiving information may be required. For example, the visually handicapped student will need to be called by name and given verbal, carefully described directions. He or she may need to be seated in the same place each day with the seat belt in the same position to make fastening easier to learn since these students learn to do many things by the sense of touch.

Deaf and hearing impaired students will use their eyes to receive information. They may talk without expression, read lips, or use sign language. Although there is a tendency to want to talk more loudly, school personnel should talk in a normal tone of voice. Use of a pad and pencil for communicating by writing notes is helpful, and information can be provided through body language. Hard-of-hearing students may turn off their hearing aids if the noise level is high. If a student usually hears and suddenly does not respond, check the hearing aid.

Transportation personnel need to be aware that the main goal for the student with disabilities is to become independent. No student should be allowed to endanger the safety of others, however. The most important thing a bus driver can do is plan for different situations that might occur and be prepared to deal with them before they happen.

The Custodian

The custodian's role has expanded from one of taking care of the physical plant to providing special assistance for students with disabilities in many different situations. Examples of situations are wheelchair maintenance, movement of special equipment such as oxygen tanks, and alterations of the physical plant to aid the physically handicapped student in taking care of basic needs such as a drink of water or a trip to the bathroom.

Many rural schools do not have a custodian on the grounds during school hours. Below are suggested ways in which the custodian may help prepare for the student with disabilities (Elsom, 1984; Elsom & Land 1984).

- Keep hallways free of objects. This is very important for blind or partially sighted students as well as those using wheelchairs or walkers.
- Arrange desks and equipment to meet the needs of special students. The teacher may develop a particular plan for desks and equipment to be used by the child who is disabled.
- Restrict use of chemical and cleaning agents. Students with disabilities may be especially sensitive to harsh chemicals or cleaning agents.
- Maintain appropriate floor surfaces. A hard slick finish may be very attractive, but it may not be appropriate for students with disabilities who are in wheelchairs, use walkers, or

are on crutches. A clean surface which is not slick is best suited for these students.

- Keep all tools, cleaners, and chemicals in a locked closet or work station. Students with disabilities, many of whom may not be able to read label warnings, are especially likely to hurt themselves if tools, cleaners, and chemicals are not secured.
- Maintain sanitary drinking fountains and restrooms. This is important for all children, and is even more essential for students with disabilities. These students may be prone to contracting colds and other respiratory diseases, and may not be able to use the drinking fountain or restroom facilities by the most hygienic methods.

If the custodian is available during the school day, the following suggestions may support the rural student with disabilities.

- Provide emergency clean-up. Any child may become ill and create a mess. Some students with disabilities may be more likely to do so because of stomach control problems.
- Move and maintain special equipment. Many students with disabilities have special equipment such as a wheelchair, oxygen source, or teaching machine to assist with functioning while at school. This equipment may need to be moved as students move from one place to the next and may occasionally require maintenance. The custodian should be prepared to accommodate such needs while the student is at school. It is recommended that the school principal be consulted before providing any maintenance.
- Be a good and pleasant model. The custodian is one of the adult models after whom children pattern their behavior.
- Students with disabilities respond especially well to a pleasant, friendly person. Such modeling encourages respect plus builds student self-esteem.

Food service personnel

The school cafeteria has traditionally been a place where students can enjoy a nutritious meal in a pleasant social environment. Learning does not stop in the classroom, but continues in the school cafeteria. Food service personnel may need specialized training in order to create a satisfying experience for the student with disabilities (Vincent, 1984; Vincent & Land, 1984). For example, minor changes in food preparation methods may be necessary. Consideration of problems involving the use of hands and chewing may determine which changes are required. The following are possible preparation method suggestions:

- Serve food warm or cool rather than at extreme temperatures.
- Serve curly noodles rather than spaghetti.
- Serve soft, thinly sliced bread for sandwiches.
- Serve taco ingredients separately because they may be too difficult to handle in combination.
- Avoid food with hard crusts such as pizza.
- Serve thighs and breasts of chicken without rib bones.
- Serve a corndog on a stick rather than a hotdog on a bun.
- Avoid highly seasoned food to prevent coughing or choking.
- Make casseroles which are easier to eat than several foods served separately.
- Mix applesauce with peas or other hard to handle vegetables and food items.

The nurse, parent, or the student's teacher should alert food service personnel to the child's special dietary needs. When possible, the student should be encouraged to become directly involved in dietary decisions by learning to recognize foods which are not permitted, eliminating these from their selections, and interacting with food service personnel regarding nutritional needs. Examples of special diets needed by students are low-calorie diets due to lack of mobility, diabetic, and low-sodium diets.

Simple changes in a normal school food service menu can be made to accommodate special diets for children with disabilities. The following are a few examples:

- Use fresh raw apples rather than apple crisp for sugar-free diabetic or low-calorie diets. Use fresh fruit or other dessert substitutions.
- Remove portions for sugar-free and low sodium diets before seasoning.
- Eliminate salad dressings for low-calorie diets.
- Reduce portions for low-calorie diets.
- Provide thinly sliced bread for low-calorie diets.
- Serve white milk rather than chocolate milk.

Listed below are several basic techniques which can be used to give students with disabilities independence in the school cafeteria during serving time:

- Keep aisles and entrances clear of unnecessary equipment. Be sure wheelchairs and walkers can move through serving lines.
- Keep all eating utensils and other serving items at a lower level for easy reach (for example, front service milk machine).
- Prepare silverware, beverage cartons, and straws in packages making handling easier. For example, wrap silverware in a napkin and tape a straw to the milk carton.
- Use only non-breakable serving utensils.
- In an effort to encourage independence, it is important to allow students to go through the regular lunch line provided they are able to handle a tray (e.g., on their lap or the arms of a wheelchair). For students with limited or no use of their hands, or using a walker, a teacher aide or "buddy" can accompany the student to provide assistance.
- Allow a student using a walker to go through the lunch line with assistance from a peer.

School secretary

The major responsibility for an efficiently run rural school office lies with the secretary. This individual works very closely with school administration requiring that clear lines of communication be maintained at all times. Opportunities will arise where students with disabilities and their families may request and benefit from the role of these school personnel. Direct contact, indirect contact through telephone calls and notes, and report and record maintenance are responsibilities related to students needs (Land, 1984c).

The secretary has responsibilities concerning confidential information pertaining to communication among public school officials, parents, and the school community as relates to the student with disabilities. Parents of the disabled are, by law, part of the team working with their children. An important responsibility of the secretary is to maintain positive public relations between school personnel, parents, and the community.

The school secretary is often accountable for the physical security of confidential information. Records are kept in a central location and the secretary must know the legal procedures for examination of information regarding students. Most states have developed policies and procedures which are specific to their state and in compliance with PL 94-142.

Some students with disabilities may require medication and may give the medication to the secretary for safekeeping. The secretary should keep a log of each contact involving medication. The student's name, type of medication, date, and time of pick up must be recorded. The secretary should not directly administer medication since this is considered dispensing; a task reserved for medical professionals. Taking medication is the student's responsibility and should be supervised by a school nurse or appropriate designee. A change in type or dosage of medication can cause an alteration in student behavior. In some cases, the school secretary may be the first person who puts medication and behavior changes together. Any observed changes should be reported to the proper school officials as soon as possible.

As an important member of the support personnel educational team, the school secretary can adhere to the following guidelines to assist the student with disabilities in reaching desired educational goals:

- Be friendly. Call the student by name; say hello when he or she enters the office.
- Find out the needs of each student by contacting the student's teacher and other appropriate school personnel.
- Be kind and understanding when talking with parents in person or by telephone.
- Set a good example of support and acceptance of students so that others will follow the example.
- An important goal for the secretary, the student, and the parents is to feel that school is an enjoyable and profitable experience.

Summary

All rural support personnel should have access to training regarding students with disabilities whom they are likely to come in contact with during the course of the school year. We have provided a brief outline listing issues with which secretaries, bus drivers, custodians, and food service personnel should become familiar. Rural schools, because of their size, are less likely to provide systematic inservice for support personnel. One method for dealing with this problem is to use "canned," or pre-prepared, inservices. A recommended resource for these materials (Land, 1984) is the vocational materials clearinghouse.

Manuals from the vocational materials clearinghouse are designed to be used as part of an inservice program for school support personnel. Manuals (see reference section) are available for the inservice presenter and participants. The trainer's manuals provide information necessary to conduct inservice training in each support area (bus driver, secretary, custodian, food service worker) as well as diagrams, figures, and cartoons for use as overheads or slides to enhance presentations. The clearinghouse provides manuals for participants which cover the same basic content as the trainer's manuals, but with a reduced (sixth grade) readiness level. The manuals are designed to reinforce or supplement inservice from the trainers. All of the manuals, entitled *Support Personnel and Handicapped Students*, are available through the National Clearinghouse of Rehabilitation Training Materials, 816 West Sixth Street, Oklahoma State University, Stillwater, OK 74078.

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Perceptions of rural preschool special educators concerning preservice training

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Abstract

A survey was conducted of preschool special education classroom teachers from five predominately rural western states. The survey focused on teachers' perceptions of preservice training and noted their perceptions of needs. In addition to demographic data, the survey included 19 Likert scale items to which each teacher responded. The results of the survey and a discussion are presented.

Introduction

With the passage of PL 99-457, preschool special education became a rapidly growing field. Unique problems arose for a significant number of children living in rural regions of the United States (Sher, 1978). Rural children exhibit disabilities in proportionally larger percentages than urban children (Helge, 1984). Traditionally, these students receive minimal, if any, special education services and consequently present unique service needs.

Among the many continuing problems of rural school districts is the recruitment and retention of qualified specialized staff (Helge, 1981; Marrs, 1984; McIntosh & Parsons, 1987). Additionally, rural preschool special educators are expected to meet a variety of needs (Mallory & Berkley, 1986). Helge (1984) reported that unique needs of rural students with disabilities generally have not been considered in teacher training programs. The purpose of this study was to focus on the perceptions of personnel who provided programming to rural preschool children with special needs.

Method

This study gathered information on the characteristics and adequacy of preservice training for teachers serving rural preschool children with a variety of disabilities. Teachers in five predominantly rural western states were surveyed.

Development of the survey

The survey was developed to identify perceptions of rural teachers regarding preservice training. The content was designed to replicate topics studied in an earlier survey of special education administrators (Helge, 1983). Subjects provided demographic data including sex, age, birthplace, marital status, size of present community, primary economy of present community (e.g., agriculture), years of teaching experience, years planning to work in present position, location of preservice training (i.e., in state, out-of-state), certification status, type of preservice training, type of preschool program (i.e., center-based, home-based, or combination), and reasons for working in a rural community.

The survey also identified teachers' perceptions of their preservice training experience and needs in the following areas:

1. working with low-incidence disabling conditions
2. utilizing a transdisciplinary approach
3. understanding the culture, customs, and mores of rural areas
4. identifying resources available in rural areas
5. adapting curriculum for students with disabilities
6. understanding PL 94-142 and other special education laws
7. understanding and utilizing administrative and managerial skills
8. evaluating young children
9. working with families
10. dealing with the remoteness of rural communities.

The subjects were asked to rate 19 statements based on a five point Likert-type scale (1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree). Content validity was assumed based upon previous research by Helge (1984). Thirty teachers living in rural communities were asked to complete the survey prior to target population administration. A split-half reliability quotient was calculated; a moderate quotient of .68 was obtained.

Subjects

The names and addresses of rural preschool disability programs were obtained from six western state special education chiefs. Permission to send surveys to these programs was also obtained. One state office was unable to provide a listing because contracted providers were used (e.g., speech/language pathology). A total of 314 surveys were mailed. For those teachers who did not respond within two weeks, a second copy of the survey was sent. In sum, 111 surveys were completed and returned. This number represented 35% of the total surveys mailed.

Results

The majority of teachers surveyed were married females with 66% between the ages of 26 to 40 years. Most of the surveyed individuals resided in towns of more than 2,500 residents. There appeared to be no significant difference between these teachers and persons living in smaller towns with regard to demographic make-up, perceived needs, and preservice training received. Most of the teachers surveyed (60%) resided in agricultural communities. Although the communities were rural by definition, the vast majority of preschool special education teachers provided services through a center-based or combination center-based/home-based approach. Only three individuals worked exclusively in the children's homes. Almost 50% of the teachers had been employed in their present positions four or more years, and 70% planned on remaining for an additional three or more years.

The survey items are listed below:

1. My preservice training provided me with a knowledge of the culture, customs, and mores of rural areas.
2. My preservice training provided me with effective strategies for identifying available resources in rural areas.
3. My preservice training prepared me to cope with the remoteness of the community in which I work.
4. My preservice training provided me with various techniques to deal with the transportation constraints of the rural community in which I reside.
5. My preservice training enabled me to provide services for children with low-incidence handicapping conditions.
6. My preservice training enabled me to utilize generic approaches with the children with whom I work.
7. My preservice training provided me with strategies which enable me to adapt curricu-

lum to meet the needs of preschool handicapped children.

8. My preservice training provided me with an understanding of PL 94-142 and other special education regulations.

9. My preservice training provided me with effective testing and evaluation strategies to utilize with preschool handicapped children.

10. Generalist/noncategorical skills should be a part of rural preservice training.

11. Categorical coursework should be a part of rural preservice training.

12. More experiential training should be a part of rural preservice training.

13. More training on working with other professionals should be a part of rural preservice training.

14. Training on the unique characteristics should be a part of rural preservice training.

15. Training on how to deal with the lack of support services in the rural community should be part of rural preservice training.

16. Rural preservice training should include instruction on the provision of services to children affected with low-incidence handicaps.

17. Training on how to adapt available curricula should be part of rural preservice training.

18. My preservice training provided me with a knowledge of administrative and managerial skills.

19. My preservice training provided me with the knowledge I need to work with families in rural areas.

A majority of respondents agreed or strongly agreed with statements 1, 2, 3, and 4. Statements with which teachers disagreed or strongly disagreed included 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17. Questions 18 & 19 were loaded toward the center.

Discussion

The data suggested that teachers surveyed were generally dissatisfied with their preservice training. This is consistent with Helge's (1984) finding that only 10% of teachers felt adequately prepared for work in rural communities. It should be noted that follow-up studies involving graduates from other program majors or courses of study generally obtained similar results (Ayers, 1978; Brown, 1978; Hord & Hall, 1978; Phelps & Frongillo, 1986; Schwanke, 1980). In this study, the results may be an artifact of the instrument used to measure perception of preservice needs. A survey format that provided more open-ended responses may have yielded considerably different results.

Helge (1981) offered several suggestions to school administrators regarding how change in rural districts might be effected. Those same suggestions may be equally applicable to teacher training programs. First, it is important to determine the needs of young, exceptional students in local districts, and then design preservice training programs with these needs in mind. According to Marrs (1984), "Such strategies must use existing facilities and resources, be consistent with certification guidelines for those to be trained, and include a substantial amount of training and integration with practicum experience" (p. 41). However, the program developer should be cautioned. While Guerin and Roberts (1987) described a successful attempt to meet the unique needs of rural special educators, the results of this survey indicated that a single concept for rural preschool special education preparation would not be feasible. Survey results were supported by Helge (1981) who noted that rural communities have varying needs which prevent a single concept training model. Additionally, Marrs (1984) suggested that teachers trained to work specifically with rural children with disabilities will be more successful both personally and professionally.

It is noteworthy that most teachers completing the survey were trained in their home states and taught in their home communities because of familial or birthplace ties. It may be advantageous for a district to determine the need for preschool special education teachers in a community, and then survey local teachers to identify individuals interested in "retooling" into the preschool special education areas. The school system could demonstrate teacher support by subsidizing the costs for additional training. Greater program commitment may then be exhibited by the teacher. It seems important for the school system to utilize individuals who have local community as a resource.

Colleges and universities must address recent federal legislation that focuses on provision of services to young, exceptional children, including those in rural areas. Training assistance funds are available to states to meet the needs of preschool children with disabilities. Cooperation and collaboration among local public school systems, state departments of education, and colleges and universities will be required in order to effectively train individuals.

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Rural preservice teacher preparation using two-way interactive television

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Abstract

The impact of a two-way interactive television course for rural remote teacher preparation was evaluated using a variety of measures. Areas of primary importance reported in this paper are:

- How did learner outcomes of rural remote students compare to on-campus students participating in the same class?
- What were the perceptions of rural remote students regarding instructional quality of two-way interactive television?
- What were the perceptions of rural remote students regarding technology?

Learner outcomes for on-campus and rural remote students were equivalent. Ratings regarding the quality of instruction and technology were above average except for provision of feedback to distance learners.

Delivery of off-campus teacher preparation programs in rural remote regions presents a major challenge for training institutions attempting to meet the unique needs of rural educators. Models currently used range from correspondence courses, on-site instruction requiring travel for professors, teleconferencing, computer assisted instruction, and a number of techniques using television as a delivery medium. The success of any of these models should be judged by considering several factors ranging from cost and space used to students' reactions. The final criterion, however, must be the performance of students: Have the students learned? What were the students' attitudes regarding the course? How does the failure and/or drop-out rate compare with traditional courses?

Over twenty years have passed since Eric Ashby (1967) proposed that there are four revolutions in education. He identified the fourth revolution as the use of instructional technology. The Carnegie Commission (1972) followed with an in-depth study on the uses of instructional technology in higher education. This report deals with the impact of instructional technology on students. Beginning with documentation and recognition of the need for alternative delivery systems in teacher preparation, the Department of Special Education at the University of Utah experimented with classes offered via two-way interactive television to rural sites. The department identified a growing need for specialized training of rural teachers who reside distances greater than 150 miles from the university campus. According to Whittington (1987), few researchers on distance education have evaluated the effectiveness of two-way interactive television as a means of delivering university instruction to rural remote and off-campus college students.

Three primary questions were addressed in this study. First, the authors were interested in assessing student learning outcomes. Would learning performance of rural students compare favorably with those students who received instruction "face-to-face" with their instructor? Second, what were the perceptions of rural remote students regarding the quality of instruction delivered through two-way interactive television? Third, what were the perceptions of rural remote students regarding the technology and media used in transmitting the course? Additionally, formative evaluation data were sought to enable faculty to de-

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velop a continuum of courses that would provide specialized instruction to rural field-based students. Evaluation outcomes reported in this paper present both positive and negative information about the first course taught using two-way interactive television.

Participants in this study consisted of 40 preservice and/or inservice teachers enrolled in a special education methods course, Educating Students with Behavior Disorders. The course was taught on campus in the university instructional television studio and transmittted simultaneously through a sophisticated microwave system to two other rural remote locations about 150 miles away. The total number of students enrolled from the rural sites was twenty with an equal number from the on-campus class.

The on-campus class of students served as the comparison group for this evaluation and received instruction in a television studio classroom. The off-campus group was characterized by the following features:

- seventy percent were certified regular education teachers
- twenty-seven percent were certified learning disabilities teachers or were trained in some other area of special education
- eighty-three percent had received preliminary training in applied behavioral analysis
- one-hundred percent had completed an introductory special education course.

The rural remote group was characterized by the following features:

- sixty-two percent were certified as regular education teachers
- thirty-eight percent were certified as learning disabilities teachers or were trained in some other area of special education
- seventy-seven percent had been trained in the use of applied behavior analysis techniques
- seventy-two percent had completed an introductory special education course.

Although no attempt was made to select the groups based on their level of certification or other demographic features, they shared many common characteristics relative to their preparation and training experiences.

Table 1. Demographic characteristics of the on-campus and rural-remote students.

On Campus Group:	
Certified as regular class teachers	70%
Certified in learning disabilities or some other disability area	27%
Received training in applied behavior analysis	83%
Completed an introductory course in special education	100%
Rural-Remote Group:	
Certified as regular class teachers	62%
Certified in learning disabilities or some other disability area	38%
Received training in applied behavior analysis	77%
Completed an introductory course in special education	72%

Measures of effectiveness

The authors assessed the effectiveness of the two-way interactive television course using several evaluation tools. The first measure of effectiveness was academic learning performance as determined by an objective pretest and posttest. The items for the pre- and post-tests were randomly selected from a bank of test items with two items selected from each unit of instruction. Twenty complete pre- and post- tests were available for each subject group.

The second evaluation tool was a course inventory used to assess all courses taught within the academic department. The course evaluation form assessed student perceptions on ten factors. It employed a seven-point Likert scale for each of the factors. A rating of 1 represented poor performance and a rating of 7 represented excellent performance in teaching.

The third assessment tool was a media evaluation designed to evaluate various elements of two-way interactive television sessions and students' perceptions of the class. The media evaluation included questions that were similar to the student course evaluation as well as questions specific to the technology used in two-way interactive television courses. A Likert rating scale of 1 to 5 was used to assess each variable (1 = low, 5 = high). The media and course evaluations were completed at the conclusion of the course.

Evaluation outcomes

Evaluation of learning performance

An analysis of covariance was used to examine the pretest and posttest scores for each of the groups. This analysis was used in order to reduce experimental error and increase the likelihood of unbiased estimates of learning performance as measured by the objective pre- and post-tests. Neither group performed significantly better than the other group on the objective pretest. At the conclusion of the course, the on-campus and rural remote participants completed the objective posttest. Both groups received similar mean scores on the posttest measure. Again no significant differences were established between the two groups.

Course evaluation

Ten factors were evaluated using the department course evaluation. Each class participant was given the opportunity to rate the television instructor on overall teaching effectiveness, presentation of concepts, motivation of students, provision of feedback, demonstration of interest in students' growth, provision of meaningful assignments, utilization of fair evaluation techniques, promotion of learning through course format, the extent to which the course met specified objectives, and definition and clarification of course objectives and requirements. The mean ratings for each of these factors are found in Table 2.

The on-campus group consistently rated each of the factors higher than the off-campus group. However, both groups rated all items above average with the exception of rural remote student ratings of "provision of feedback relating to student progress." Evaluators were concerned with all factors rated below 5.0 by the rural remote group. These items are considered further in the discussion section.

Media evaluation

Of particular interest to the authors were responses of rural remote students to the media evaluation. Fourteen specific questions were addressed in this evaluation. Twelve of the fourteen questions posed on the media evaluation were answered using Likert scale ratings. A summary of mean ratings for each of the factors is found in Table 3.

Table 2. Mean ratings on the department course evaluation for the rural remote group and on-campus group.

Factors	Rural Remote	On-campus
Overall rating of teaching effectiveness	5.16	6.11
Presentation of concepts in an organized and clear manner	4.66	6.00
Motivation students through the creation of an atmosphere of academic inquiry	4.52	6.05
Defining and clarifying course objectives, expectations, and requirements	5.05	5.94
Provision of feedback relating to student progress	3.22	6.11
Demonstration of interest in students' academic growth	5.05	6.38
Provision of assignments which contributed to the understanding of the course content	4.94	6.05
Utilization of evaluation techniques which fairly measured class content	4.88	6.05
Promotion of learning through course format	5.00	6.11
Extent to which this course met specified objectives	5.05	6.27

Table 3. Mean ratings on the instructional media evaluation scale for the rural remote group.

Factors	Mean rating
How would you rate this telecourse compared to a conventional course?	2.44
How would you describe the amount of material covered in the telecourse?	3.67
How would you describe the level of difficulty of the telecourse?	3.88
How well organized was the content of the telecourse?	3.05
How clear and understandable was the content presented through the telecourse?	3.00
In terms of the course objectives, how relevant were the programs?	3.38
How would you describe the presenter's delivery in the video programs?	3.77
How well were the text, assignments, etc. integrated with each week's class?	3.22
How helpful was it to have slides, films, and other visual materials used in the course?	3.35
How beneficial was the use of text screens to support the presenter's delivery?	3.77
Did the course had you interest?	3.64
Having taken this class, how would you classify your attitude toward telecourse?	3.56

One media evaluation question required "yes" or "no" responses. Responses were divided regarding the question, "Was the lack of discussion during the teleconference sessions a problem with this course?" Fifty-six percent of rural remote participants responded with a "yes." Thus slightly more than half of these students found the level of discussion problematic. Possible reasons for this response are dealt with in the discussion section. Responses to questions relating to technical problems with television reception (poor picture, sound, etc.) show that these areas posed no problems for rural remote students.

Discussion

The purpose of this evaluation was to investigate the effectiveness of two-way interactive television in delivering coursework to rural remote students as compared with "face-to-face" instruction provided in an on-campus classroom. An analysis of learning outcomes for the comparison and contrast groups revealed no significant differences. Both groups appeared to learn equally well from the activities and instructional procedures. Although instructional feedback for distance learners was frequently late in arriving, it did not appear to adversely effect learning performance. The results obtained in this study were similar to those achieved by other researchers (Ellis & Mathis, 1985; Sharpe, 1980) who investigated use of interactive television.

In general, ratings given by rural remote groups on the course evaluation were above average on all items except the provision of feedback. In contrast, the on-campus group rated all items above 6.0 on a seven point Likert scale with the exception of one item that was rated 5.94. These ratings were consistently higher than average and indicated that perceptions of the on-campus group were relatively high in comparison to other on-campus departmental class ratings.

The major problem identified through course evaluation ratings was the "provision of feedback" to the off-campus groups. Learners within these groups viewed the "feedback" as well below average. Unfortunately, adequate mechanisms for providing feedback to distance learners were not in place during this first experimental course. Findings from this evaluation supported Howards' (1987) assumption that "The quality of feedback given to students studying at a distance is likely to be of critical importance to their experience as learners and to the outcomes of that experience" (p. 24). The findings from the pre- and post-tests of content knowledge presented in the class indicated that both on-campus and distance learners achieved similarly. However, distance learners were at a disadvantage due to the inefficiency of the formative feedback provided.

The authors identified several factors that led to problems associated with the feedback ratings. First, the ratings appeared to be related to the extended time needed to return corrected assignments. Student exams, simulations, and other assignments often required two or more weeks to be corrected and returned. Second, during the planning stages, the instructional development team anticipated some problems associated with distance learning, i.e., lack of personal interaction with the instructor, problems of obtaining support materials for the course, and inadequate library facilities in rural areas. In order to overcome these problems, local facilitators were appointed to manage off-campus classrooms and distribute materials used as supplements to the interactive television presentations. Materials were sent weekly to facilitators through a common carrier. Unfortunately, support materials were occasionally late in arriving and created problems for off-campus facilitators and students. Additionally, the on-campus instructor was responsible for correcting all course assignments and providing feedback to students. Rural remote students were encouraged to utilize a toll-free watts number to contact the instructor for individual consultation in an effort to promote interaction and provide access to the instructor. However, the instructional development team did not anticipate the number of students who eventually enrolled for the class and had not provided for the amount of additional instructor time required.

The instructor was not granted additional assistance either in correcting assignments or completing other related instructional tasks. This constituted an increase in teaching responsibility equal to instructing another class. Moreover, this increased teaching load was not accompanied by reductions in other instructional and departmental responsibilities. Additional assistance and instructor release from other equivalent duties of the instructor are necessary if prompt feedback to rural students is to be provided. Another alternative includes training facilitators to enable them to correct assignments and provide on-site feedback.

A second factor rated below 5.0 was the question relating to the "presentation of concepts in an organized and clear manner." This rating may, in fact, parallel some of the problems associated with the feedback issue. Student support materials were not always available on the day of class due to difficulties associated with delivering materials to local facilitators. At times, materials were sent without being checked and therefore were often out of sequence with instructional presentations. Since the on-campus group rated this factor as 6.0 and both groups concurrently received information from the instructor, it appeared that the lower rating by the rural remote group related to issues other than actual instruction. Again, this points to the need for coordination and communication with local facilitators in order to avoid problems that may be interpreted by students as a lack of organization.

A third factor that concerned the authors related to the instructors' "motivation of students through creation of an atmosphere of academic inquiry." While there appeared to be several possible reasons for the low rating on "feedback" by rural remote students, no specific explanations could be identified as the basis for the rating on this factor. Additional research using other data collection devices (questionnaires, interviews, etc.) may provide clues for improvement in this area. Moreover, the instructor's inexperience with technology and related instructional demands (directing attention periodically to television cameras in the classroom studio, adjusting to different types of microphones and incoming audio, dealing with studio lights and media support personnel, etc.) may have detracted from the perceptions of the rural remote groups.

Also, since this was the first experience for the rural remote students using two-way interactive television instruction, their perceptions may have been based on past experience with "face-to-face" instructional settings.

The fourth factor that was considered problematic related to the "provision of assignments which contributed to the understanding of course content." In the authors' opinion, this was linked to problems identified in the area of feedback to rural remote students. Consideration needs to be given to sequencing and matching assignments more closely with course materials, particularly those items which are supplied as support materials.

The final area of concern was the factor assessing students' perceptions regarding "utilization of evaluation techniques which fairly measured class content." In considering differences in perceptions between the on-campus and rural remote groups, the rural remote groups may have judged this factor more harshly due to the length of time it took to receive corrected assignments. Again, this area related to the feedback issue and should be considered in future plans for two-way interactive television courses.

The media specific ratings contained a number of interesting patterns. Distance learners rated the two-way interactive television course as being "not quite the same" as a conventional course; whereas, the on-campus learners rated the course as being "somewhat better" than a conventional course. The significant difference in ratings given by the two groups may be attributed to instructional feedback provided to each group. The on-campus group received feedback promptly at the beginning or end of each new class session. The feedback for remote learners was generally delivered within two to three weeks. In addition, on-campus students' ratings may have been influenced by the Hawthorne effect. They received their instruction in a new and novel studio setting.

With regard to other variables rated on the media evaluation form, few significant differences appeared. Distance learners' ratings of "amount of material covered," "difficulty of the course," and "effectiveness of text screens" were all above average.

Ratings of one particular variable did raise concerns about the instructional pacing and technology used in the course. Distance learners response to the question, "Was a lack of discussion during the teleconference session a problem with the course?" was a resounding "Yes!" A variety of factors may have been responsible for this perception. First, it was possible that the instructor did not provide adequate time or encouragement for discussion activities. Another factor that may have contributed to lack of discussion was the paucity and/or type of microphone equipment available at each remote site. For example, one site had only two microphones for fifteen students. Those students who wished to engage in discussion during class had to first secure a microphone. Another problem was the solution of microphone design. In order for a rural student to communicate with the on-campus site, it was necessary to depress a pressure pad at the microphone base. Given these conditions, students mat have been reluctant to participate in discussion activities. These difficulties point to the importance of considering the type and amount of equipment needed for interactive television instruction. Maintaining learner attention and interaction on course content, rather than diverting attention to the mechanics of the technology involved, seems necessary to facilitate an optimal flow of interaction.

Other technical elements of the course programming were perceived positively. The sound, as well as the picture quality, were not rated as being problematic in any of the remote sites. This was, in part, a function of the quality and dependability of the microwave system as well as the technicians who operated it. It should be noted that the course was transmitted during the winter quarter when fluctuations in weather conditions were often harsh and erratic. In spite of these conditions, the system was highly dependable in transmitting audio and video signals to and from remote sites.

Further research is needed to identify specific variables that are responsible for promoting highly motivated learner involvement as well as positive learning outcomes. Other questions that merit further study relative to instructional aspects were raised in terms of how instructor specific is the success or failure of such classes. For example, how willing are traditional campus-based instructors to explore new and different teaching settings? How will instructors be rewarded for development of nontraditional instructional programs in a traditional reward structure? What types of human and material resources need to be made available to enable instructors to efficiently perform these additional duties?

In this investigation, the retention rate of students was 100 percent with no drop-outs or failures. However, this area needs further study over time, with the transmission of a variety of courses, in order to effectively assess this factor.

Cost effectiveness of serving distance learners via two-way interactive television must be considered. The use of such sophisticated technologies is costly. Comparisons need to be made regarding the cost of using various technologies versus other delivery systems for serving distance learners. Funding for this experimental class was partially supported through the University Instructional Media Services and the State Educational Telecommunications Operations Center (SETCO) for developmental purposes. If such a program is to be self-supporting, student tuition and fees need to be examined. Will the use of technology price the course out of the market? These questions are the subject for further investigation as this project develops.

In summary, two-way interactive television appeared to be an effective means of delivering coursework to distance learners. Preliminary results derived from this study provided a basis for identifying the potentially important features of effective interactive television instruction.

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Teacher competencies for rural special educators: Implications for special (adapted) physical education

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Abstract

Rural special education programs present a unique set of circumstances. This article discusses research findings regarding competencies suggested for special education and special (adapted) physical education teachers. Implications are made for rural settings.

With the current unprecedented thrust among legislators and citizens for reform in education, it is evident that there is a movement to re-examine regular and special education in all its phases (Bell, 1982; O'Brian, 1983; Sontag, 1983). Clearly related to the issue of reform is a lack of consensus in the United States on teacher certification (Clark, 1984; Lilly, 1983; Sontag, 1983). The recent attention on the quality of education and teachers in today's schools has encouraged many states to implement programs designed to ensure teacher competency. These plans typically involve identifying teacher behaviors appropriate for all teachers (Sass-Lehrer & Wolk, 1984).

Competency may be described as the acquisition of knowledge, the application of it, and the development of needed behaviors and skills (Behroogian, 1982). In today's educational terms, competencies refer to factors or qualities deemed important in teaching and requiring a minimal level of expertise in performance (Wendt, 1983). The competence process puts research findings and professional consensus into a proper perspective so that implications for behavioral objectives may become more apparent and educators may have a clearer understanding of requirements (Hall, 1976).

The most comprehensive competency study reviewed was done by Whitten and Westling (1985). Their study sought to describe the variation of validation techniques in teacher competency research during the past ten years. The initial step in the research was to establish an extensive listing of important competencies. This information was synthesized and provided a list of pertinent competencies for teachers of the severely and profoundly disabled.

Another purpose of the research was to form a data base or level of empirical validity for the competencies. In searching the literature for reports on teacher competencies, variation was found in writers' justifications, expressed or implied, for suggesting that a particular competency or competency area was necessary.

Four levels of validity were found in this study. These included:

- Opinion--the author stated that the competency was necessary but offered no further validation.
- Supported opinion--the author substantiated the statement by citing other literature.

- Professional consensus–the competency statements listed were rated by a group of professionals, usually teachers, as being important or necessary.

- Student gain–the competencies were found to be related to student learning when demonstrated by teachers.

Pottinger and Goldsmith (1979) indicated that there might not be total agreement about the meaning of competence. Some consensus emerged about several important aspects of the concept that it is desirable, can be taught, can be measured, and is rarely the true basis of teaching, learning, assessment, accreditation, certification, or job access.

Research: Special education teacher competencies

In the past few years, much emphasis has been placed on the development of competencies for those who teach disabled students (Whitten and Westling, 1985). Concern about the relevance of instruction and accountability has been the force behind the movement for reform in teacher preparation (Rosner & Kay, 1974).

The review of literature indicated that the growth of special education teacher training programs has and continues to be directly tied to federal legislation and federal funding. Since 1950, there has been a 600% increase in the number of specialized teachers employed to educate disabled individuals, and a corresponding increase in the number of special education administrators, supervisors, and college and university educators (Stevenson, Hebler & Reynolds, 1976).

Teacher preparation has long been a challenging aspect of special education (Andrews, 1983). Hallahan and Kaufman (1983) indicated that special education continues in a state of transition and has no clear conceptual or professional boundaries. The need for a well-defined zone of responsibility for special education has become urgent (Heller, 1981). The preparation of special education teachers has undergone many fluctuations in quality and content over the years. Because of the lack of explicit standards, many preparation programs have contributed only part of what is needed to fully prepare teachers (Heller, 1981). Major efforts in standards development are being carried out under the auspices of the Council for Exceptional Children (CEC) and throughout the accreditation process of the National Council of Accreditation of Teacher Education (NCATE) according to Lilly, 1983.

Presently, special education is a confusing and difficult maze of titles, labels, and guidelines, through which educators and practitioners must wander. This poses an important concern for university teacher education programs because they must strive to match graduates' competences to the needs of exceptional children as perceived by various state standards (Heller, 1983; Smith-Davis, Burke & Noel, 1984). This is complicated by the high mobility of current university graduates of teacher education programs.

Sarason, Davidson, and Blatt (1962) studied the gap in teacher education between the daily functioning of the teacher and the curricula by which the individual is prepared. They described a special education teacher, a psychological diagnostician, and/or tactician. Regarding teacher preparation, they proposed, as a first step, detailed descriptions which allow one to state specific assumptions and provide direction for the development of relevant techniques of evaluation.

Special educators recognize the need for teachers of exceptional children to develop specialized skills to work with students who have unique needs. They should also consider the possibility that the relative importance of specific competencies may vary depending on certain characteristics and setting variables (Sass-Lehrer & Wolk, 1984).

Previous investigations of competencies for teachers of exceptional students have suggested that competencies vary according to specific student characteristics or setting variables. Studies have not examined the influences of these or other variables on teachers ratings of competencies (Mackie & Harrington, 1959).

Two teacher characteristics that may influence perceptions of competencies included years of teaching experience and professional preparation. Numerous studies indicated that teacher concerns change over time. Teachers with more experience typically have different perceptions than teachers beginning their careers (Fuller, 1969).

Sutherland and Castleberry (1985) found 468 indicators of quality programming defined and categorized in the literature. The indicators were generic rather than specific to various disabling conditions and did not identify any specific trends. However, they did conclude that masters degree special education teacher training programs supported by the Division of Personnel Preparation (DPP) under the Training Personnel for the Education of the Handicapped program do contain indications that they are quality training programs.

The review of the literature identified several studies regarding competencies in special education. Competency development studies have been conducted regarding teachers in the following areas: various levels of mental retardation (Jamieson, 1982); educable mentally retarded (Childs, 1978; Vandeberg, 1982); hearing impaired (Sass-Lehrer, 1982); multiple disabilities (Huer, 1981); preschool disabled (Blough-Ryan, 1982); gifted (Hultgren, 1981); secondary resource teachers (Preuss, 1981); autistic (Smith, 1980); visually impaired (Kimbrough, 1980); emotionally disturbed (Michael, 1979); and the deaf (Piccolino, 1977).

The review of the literature indicated that most of the research related to rural special education teacher competencies has been completed since the late 1970s. The review of the literature revealed the following competencies for rural special educators:

- Knowledge of small, rural schools' general education programs (Williams, Cross & Gougeon, 1985);
- Ability to work in multicategorical programs (Cole & Ranken, 1981);
- Diagnosis and identification (Williams, Cross & Gougeon, 1985);
- Ability to identify and use existing resources (Helge, 1983);
- Understanding procedures used in rural schools (Williams, Cross & Gougeon, 1985);
- Understanding context of ruralness (Helge, 1983);
- Ability to understand service delivery models used in rural areas (Helge, 1983);
- Ability to work with citizens and agencies in rural community (Helge, 1983);
- Loyalty to local communities or a similar community (Helge, 1983);
- Ability to work with a variety of disabling conditions (Cole & Ranken, 1981; Helge, 1983);
- Ability to identify and work within local community culture and value systems (Helge, 1983; Nachtigal, 1978);
- Ability to conduct inservice staff development activities (Williams, Cross & Gougeon, 1985);
- Ability to work closely with parents (Vasa & Steckelberg, 1981);
- Persons with extensive rural experience who are more at home in rural teaching (Williams, Cross & Gougeon, 1985); and,

- Ability to adjust to such conditions as loneliness and isolation, transportation problems, and lack of personal privacy (Williams, Cross & Gougeon, 1985).

In response to the recognition of the widespread and diversified needs of the disabled, training programs for special educators have developed rapidly. There is now a need to focus on the quality of training programs to ensure that there are not only opportunities for disabled children to receive an education, but that those opportunities are provided by educators who receive their training in quality programs.

Research: Special (adapted) physical education teacher competencies

The review of the literature indicated that there is very little research available in the areas of teacher competencies and preparation in rural adapted physical education. However, literature relative to adapted physical education is well documented.

Public Law 94-142 has had a dramatic impact on physical education teacher preparation programs (National Association of State Directors of Special Education, 1975). The impact directly relates to teacher education and the competency of those responsible for educating the disabled in a physical education setting. The implementation of Public Law 99-457 will also have a significant impact on adapted physical education professional preparation programs.

As early as 1964, Hooley indicated that professionals needed to take immediate action in establishing competencies for physical educators working with the disabled. Stein (1969), Moseley (1977), Geddes and Seaman (1978), and the California State Task Force on Standards for Professional Preparation in Adapted Physical Education (1978) identified competencies necessary for professional performance. These articles, however, were generic and did not directly address specific competencies for rural adapted physical educators.

Various professionals in the area of adapted physical education have stated what they believe to be essential components of an adapted physical education teacher.

Ersing and Wheeler (1971) concluded that much diversity characterized training programs for adapted physical education teachers and that it was imperative that consistency in training programs be established.

Bundschuh (1976) suggested that competencies for prospective teachers entering a mainstreamed setting be categorized under the three major headings developed by Sparling (1976). These consist of an area of foundations, an area of specific impairment, and an area of program development. Bundschuh felt that such competencies could not be obtained from a single course, but should be developed by an integrated program encompassing the mainstream philosophy.

French, Jansma and Winnick (1978) suggested that there were several unique and essential competencies for special physical educators which required in-depth training beyond a regular physical education background. These competencies included assessment, program development and implementation, and interprofessional participation.

Bird and Gansneder (1979) expressed concern over the quality of adapted physical education training for those individuals who serve disabled children. DePauw (1981) indicated that many physical educators are unprepared to teach disabled children emphasizing the need for specialized training in the area of physical education for the disabled.

Aharoni (1981) stated that the adapted physical educator must have more than basic training at the university level in the diversified areas of adapted physical education, i.e.,physical education, special education, psychology, and allied medicine. Also required are the desire to serve children, creativity, organizational skills, imagination, the abilities to construct and adapt equipment and to plan activities to meet the students' needs. An adapted physical educator should be well-versed in theoretical knowledge and have an abundance of practical experience in order to relate the varied disabilities and motor characteristics of disabled individuals.

Auxter and Pyfer (1985) recommended that a person in adapted physical education have training in adapted physical education classes as well as applied anatomy and physiology. They further suggested that graduate training in adapted physical education would strengthen this background.

Many authors indicated that a field experience/practicum should be required in addition to academic programs (Aufsesser, 1981; Bundschuh, 1976; Debonis, 1971; DePauw, 1981; Ersing & Wheeler, 1971; Goodwin, 1980; Winnick, 1985).

Sherrill (1986) identified the need for adapted physical educators to be proficient in the following areas: assessment, writing an individualized education program (IEP), developmental and/or prescriptive teaching, counseling, and coordination of resources and services.

Dunn and Fait (1989) listed the following as being attributes and qualifications for an adapted physical educator.

Attributes

- Emotional maturity,
- Patience,
- Sense of humor,
- Sensitivity,
- Creativity, and
- Organizational ability.

Qualifications

- Instruct adapted activities,
- Knowledge of sport and game skills,
- Nature of the human body and its response to exercise,
- Training in methods of teaching and the psychology of learning including motor learning,
- Specific information regarding causes, nature and psychological implication of various disabilities, and
- Basic knowledge of injuries as they relate to certain disabilities.

Several states have established standards and identified competencies for adapted physical educators. The states that require written certification for adapted physical educators are: California, Georgia, Kansas, Louisiana, and New Mexico (Seaman & DePauw, 1989). Nevada, Wisconsin, Minnesota, and Indiana have developed an adapted physical education emphasis within their state certification of regular physical educators. Other states are considering some type of certification for adapted physical education (Aufsesser, 1981). Although there is not universal agreement among state education officials, administrators, and professionals, there is a growing interest in identifying the competencies that adapted physical professionals should process (Dunn & Fait, 1989).

The state of California has required that all teachers posses ten competencies to work on mainstream settings with individuals with disabilities. A list of those competencies follow:

- Diagnose childrens' academic strengths and weaknesses, perceptual characteristics, and prepared learning modalities through formal assessment procedures,

- Demonstrate the ability to assess the characteristics and behavior of exceptional pupils in terms of program and developmental needs,

- Recognize the differences and similarities of exceptional and non-exceptional pupils,

- Analyze nondiscriminatory assessment including a sensitivity to cultural and linguistic factors,

- Produce and evaluate short- and long-term educational objectives based on Individualized Education Program goals,

- Utilize various diagnostic/prescriptive materials and procedures in reading, language arts, math, and perceptual-motor development,

- Apply diagnostic information toward the modification of traditional school curriculum and materials for selected children,

- Identify and teach non-academic areas such as socialization skills, career, and vocational education,

- Discuss inter- and intra-personal relationships with students and be able to communicate appropriate information in a non-threatening manner to teachers and parents, and

- Explain current enabling legislation dealing with special education.

(California Commission for Teacher Preparation and Licensing, 1978)

The most recent attempt to define the competencies for adapted physical educators was developed jointly by representatives of the Adapted Physical Education Academy, the Therapeutics Council and the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) unit on programs for the disabled (Hurley, 1981).

This group, with assistance from many professionals, developed the *Guidelines for Adapted Physical Education*. The guidelines were intended to address competencies required for an adapted physical educator. The categories within the guidelines competencies are: biological foundations, sociological foundations, psychological foundations, historical-philosophical foundations, assessment and evaluation, and curriculum planning, organization, and implementation (Hurley, 1981) (see Appendix A).

Dempsey (1987) surveyed selected higher-education professors and specialists in adapted physical education to rate the competencies as to their importance. The study was designed to validate competencies and compare the observations of knowledgeable university professors to those of public school specialists in adapted physical education. Both groups were in agreement that the competencies were appropriate. In addition, the two groups were comparable in their overall ratings of each of the competency statements. While differences were noted, there was general consensus with both groups that the competencies were appropriate for the training of specialists in adapted physical education.

It is evident that a critical examination of adapted physical education curriculum and courses should be done at the college and university level to guide future development of adapted physical educators (Ersing & Wheeler, 1971). Flint (1967) stated that most professional programs designed to prepare regular physical educators at the undergraduate level include a course related to adapted physical education. Aufsesser (1981) agreed with Flint and additionally observed that with the mandate of Public Law 94-142, these classes must be updated to meet current needs. He went on to explain that schools with existing programs would find the task a relatively simple one, but universities having no adapted courses for major students would need substantial changes.

Aufsesser (1981) believes graduate programs should offer 12-15 academic units of adapted physical education in addition to practicum, required internships, and core courses for all masters degree students. A specialization in adapted physical education at the masters degree level provides a sound academic foundation and diverse practicum experience.

Aufsesser (1981) explained further that teacher training programs are increasingly emphasizing specialization in adapted physical education for undergraduate students. These programs have been stimulated by the need for trained specialists in the public schools. Aufsesser stated that special training at the undergraduate level is naturally not as prevalent as at the graduate level, but the trend for earlier specialization at the undergraduate level would continue.

Summary

The lack of material available in the literature clearly indicates a need for research in the area of rural special (adapted) physical education. As with any fledgling discipline, literature form related professions must be utilized to form the cornerstone of the new discipline. Until more research is available, we must draw from existing literature in the areas of rural special education, special education, and special (adapted) physical education.

Presently, few training programs address special (adapted) physical education, the quality of services, and competencies of teachers providing services to identified students in rural areas. Service delivery in rural settings requires that teachers have competencies which can effect change in students, directly or indirectly, by resolving programmatic conflicts. Potential sources of influence upon the psychomotor education of the child include teachers from other disciplines, related service personnel, administrators, community agencies, and parents (Churton, 1986). Training programs should also include a practicum and/or student teaching in a rural setting.

Helge (1981) indicated that the unique needs of rural students with disabilities have not been included in professional preparation programs. Marrs (1984) concluded that professional preparation curricula must be developed to specifically address the issue of teaching disabled students in rural areas. This is particularly important as 67 percent of all schools in the United States are rural (Sher, 1981).

To facilitate quality physical education for special education students, consideration should be given to the *Guidelines for Adapted Physical Education* (Appendix A). The specialist category is applicable for urban schools because of the large number of students. However, specialists are not employed by rural school districts because of the low student-teacher ratio. Attention must be given to the concept of a special education major possessing the competencies of an adapted physical education generalist. This would facilitate rural school districts providing quality adapted physical education programs taught by qualified personnel.

The area of adapted physical education has gone through many changes since the implementation of Public Law 94-142. This law has caused a modification of public school physical education programs and university training programs (Aufsesser, 1981). Further changes will occur with the implementation of Public Law 99-457.

The lack of material in the review literature indicates the need for continued research, curriculum and comptency development, and a long-range commitment to the preparation of rural adapted physical educators. State certification and standards for adapted physical educators needs to be adopted to ensure quality in professional preparation. The concept of a special education major and an adapted physical education minor must be adopted by state certification bodies to assist in providing a full spectrum of services to children with disabilities. Continued improvement is essential in meeting the challenge issued by

Public Law 94-142 and Public Law 99-457 to benefit children with disabilities through physical activity.

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Appendix A
Competencies for the generalist and the specialist in special physical education *

Competency	Generalist	Specialist
1.0 Biological Foundations		
1.1 Kinesiology	Demonstrate understanding of functional anatomy and its relationship to individuals with or without disabilities.	Demonstrate proficiency in evaluating and analyzing motor performance in terms of motor dysfunction and in applying biomechanical principles that affect motor functioning to posture and to neurological, muscular, and other specific health needs.
1.2 Physiology of Exercise	Demonstrate ability to design and conduct physical education programs that adhere to sound physiological principles.	Demonstrate ability to design and conduct physical education programs for individuals with disabilities that adhere to sound physiological principles.
1.3 Physiology and Motor Functioning	Demonstrate understanding of anatomical and physiological deviation and the effects such deviations have on motor performance.	Demonstrate the ability to apply an understanding of physiological motor characteristics for individuals with physical, mental, sensory, neurological, and other specific health needs to programs designed to improve the motor performances of these individuals with disabilities.
2.0 Sociological Foundations		
2.1 Sport, Dance, Play	Demonstrate understanding of the ethnic, social, and cultural aspects of sport, dance, and play and the importance of these in the lives of all, including the disabled.	Demonstrate the ability to analyze the significance of sport, dance, and play in the lives of individuals with disabilities.
2.2 Cooperative/Competitive Activities	Demonstrate understanding of the potential of cooperative/competitive activities for human interaction and social behavior and knowledge of organizations that conduct appropriate activities for the disabled.	Demonstrate, ability to apply understanding of the potential for human interaction and social behavior occurring in cooperative/competitive activities for individuals with disabilities; cooperate with organizations that conduct adapted sport, dance, and play programs for individuals with disabilities.
2.3 Social Development	Demonstrate understanding of social learnings involved in experiencing human movement and its effects on perception, motivation, and personality for individuals with and without disabilities.	Demonstrate ability to apply understanding of the potential that sport, dance, and play provide for social interactions among individuals with and without disabilities.
3.0 Psychological Foundations		
3.1 Human Growth and Development	Demonstrate understanding of human growth and development, including how deviation in normal growth and development can result in disabilities and atypical motor development.	Demonstrate ability to apply understanding of deviations in human growth and development and atypical motor development to assist individuals with physical, mental, sensory, neurological, and other specific health needs.

Competency	Generalist	Specialist
3.2 Motor Learning	Demonstrate proficiency in applying principles of motor learning to teaching and learning motor skills.	Demonstrate ability to apply principles of motor learning, including motivation techniques, to the teaching and learning of motor skills by individuals with disabilities.
3.3 Self-Concept and Personality Development	Demonstrate ability to help students with and without disabilities develop positive self-concepts and overcome attitudinal barriers that can affect interpersonal relationships and development of positive self-concepts.	Demonstrate ability to apply skills and techniques in the teaching of physical and motor skills to assist individuals with disabilities to overcome attitudinal barriers that can affect interpersonal relationships and development of positive self-concepts.
3.4 Management of Behavior	Demonstrate an understanding of principles of motivation as they affect human behavior and promote motor performance, and apply various methods for developing appropriate student behavior.	Demonstrate ability to apply appropriate techniques for managing behavior, including techniques of motivation to enhance acceptable behavior and promote motor performance.
4.0 Historical and Philosophical Foundations		
4.1 Historical Development	Demonstrate understanding of the historical development of physical education, including the role and significance of professional organizations in the development of professional standards and ethics.	Demonstrate understanding of the historical development of adapted physical education, including the role and significance of professional and voluntary organizations in the development of professional standards and ethics related to adapted physical education.
4.2 Philosophical Development	Demonstrate understanding of the philosophies of physical education, current issues, and emerging trends in physical education, and identify ways that individuals realize and express their individualities and uniqueness through physical education, sport, dance, and play.	Demonstrate understanding of the philosophies of adapted physical education, current issues, and trends in adapted physical education, and identify ways individuals with disabilities realize and express their individualities and uniqueness through physical education, sport, dance and play programs.
5.0 Assessment and Evaluation		
5.1 Program Goals and Objectives	Demonstrate understanding of goals and objectives of physical education, including programs and activities for individuals with disabilities.	Demonstrate ability to develop instructional objectives that lead to fulfillment of physical education goals in psychomotor, affective, and cognitive domains by individuals with disabilities.
5.2 Screening and Assessment	Demonstrate ability to select, construct, and administer various assessment instruments for measuring physical and motor performance.	Demonstrate proficiency in using appropriate instruments to assess and interpret the motor performances of students with disabilities.
5.3 Evaluation	Demonstrate proficiency in using appropriate evaluative procedures to determine student progress.	Demonstrate proficiency in applying appropriate instruments and evaluative procedures to determine student progress in adapted physical education.

Competency	Generalist	Specialist
6.0 Curriculum Planning, Organization, and Implementation		
6.1 Program Planning	Demonstrate ability to plan instructional programs that emphasize physical and motor fitness development.	Demonstrate ability to plan individual physical education programs that are adapted to individual student needs based on goals and objectives established by an interdisciplinary team.
6.2 Individual Instruction	Demonstrate ability to apply strategies for individualized instruction in regular physical education settings based on student's current level of performance.	Demonstrate ability to implement appropriate physical education programs for individuals with disabilities based on each student's current level of performance using appropriate strategies, including task-analysis techniques.
6.3 Program Implementation	Demonstrate understanding of role and significance of physical educators as members of interdisciplinary teams.	Demonstrate ability to function effectively as a member of an interdisciplinary team using appropriate techniques for facilitating interdisciplinary communication among all persons working with disabled individuals.
6.4 Safety Considerations	Demonstrate knowledge of specific safety considerations for individuals with disabilities as they participate in physical education, sport, dance, and play activities.	Demonstrate understanding of scientific bases for specifically contraindicated exercises and activities, including transfer techniques for individuals with disabilities.
6.5 Health Considerations	Demonstrate knowledge of special health considerations when individuals with disabilities participate in physical education, sport, dance, and play activities.	Demonstrate understanding of the effects of medication, fatigue, illness, posture, and nutrition on the mental, physical, and motor performances of individuals with disabilities.

* Adapted from a statement prepared by the American Alliance for Health, Physical Education, Recreation, and Dance (1980).

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A Review of Personnel Standards for Part H of PL 99-457

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This article contains a national review of personnel standards in place for personnel serving infants, toddlers, and their families. The review covers all 10 disciplines addressed under Part H of PL 99-457. Implications for state practice and policy are discussed.

Two of the programmatic components that must be addressed by states participating in Part H of PL 99-457 are a comprehensive system of personnel development and policies and procedures for personnel standards. While these are only two components of the 14 required of states participating in PL 99-457, they represent a critical area that must be addressed before each state can be assured of its ability to implement the full scope of services required by the law (Gilkerson, Hilliard, Schrag, & Shonkoff, 1987; Meisels, Harbin, Modigliani, & Olson, 1988; Smith & Powers, 1987; Woodruff et al., 1985).

Early intervention is facing a critical shortage of personnel trained to provide services under PL 99-457 (Meisels, 1989; Meisels et al., 1988). This shortage is occurring across many disciplines. In particular, data have been collected on shortages within special education (McLaughlin, Smith-Davis, & Burke, 1986; Office of Special Education Programs, 1989), occupational therapy (American Occupational Therapy Association, 1989b; National Easter Seal Society, 1988); and nursing (Division of Nursing, Bureau of Health Professions, 1987). In addition, the Bureau of Labor Statistics (1988) has estimated employment growth rates of 36% for preschool teachers and 42% for health professionals by the year 2000. They have predicted the fastest growing occupations during this period to be physical therapists, physical therapy aides, home health aides, physician's assistants, and occupational therapists.

Compounding this shortage of professionals is the specialized training required to provide services to infants and toddlers and their families. The preparation of infant specialists requires the development of competencies and skills that are qualitatively different from the skills typically included in programs training personnel to work with young children (Bailey, 1989; Bailey, Farel, O'Connell, Simeonsson, & Miller, 1986; Bricker & Slentz, 1988; McCollum & McCartan, 1988; McCollum & Thorp, 1988). In addition, the law requires skills in areas that are usually not covered in the preservice curriculum offered to the majority of professionals. These areas include family-centered intervention, case management, interdisciplinary teaming, and interagency collaboration (Bailey, Simeonsson, Yoder, & Huntington, 1990; Courtnage & Smith-Davis, 1987).

Many recent articles have attempted to respond to the changes in service delivery created by the law by proposing specific training recommendations for individual disciplines. These disciplines include special education (McCollum, McLean, McCartan, & Kaiser, 1989; Thorp & McCollum, 1988), occupational therapy (Hanft, 1988; Hanft & Humphry, 1989), physical therapy (Scull & Deitz, 1989), nursing (Brandt & Magyary, 1989), social work (Nover & Timberlake, 1989), nutrition (Kaufman, 1989), psychology (Drotar & Sturm, 1989), and medicine (Brewer, McPherson, Magrab, & Hutchins, 1989).

While a growing awareness of the uniqueness of the training content necessary for infant interventionists should enhance the quality of those professionals being trained to implement Part H of PL 99-457, the state-level regulatory standards for service are of equal importance to the success of the law. At this time, most of the information on state certification and licensure policies has been focused on the area of early childhood special education (Meisels et al., 1988; Smith & Powers, 1987; Stile, Abernathy, Pettibone, & Wachtel, 1984; Trohanis, 1985). These data suggest a pervading lack of such certification across the country. When certification has been in place, evidence suggests the subsequent disregard of personnel standards by program supervisors of early childhood special education (Lazzari & Bruder, 1988). Yet, if a national program for early intervention is to be successful, effective regulatory state standards for practicing professionals must develop in tandem with personnel preparation programs.

PL 99-457 requires states to insure that early intervention personnel meet the "highest standards" in the state applicable to their given profession or discipline. In the development of a comprehensive, interdisciplinary service delivery system for infants and toddlers, emphasis must be placed equally on the needs of the 10 professional disciplines recognized under Part H. While a number of professional organizations have issued position papers related to guidelines for early intervention standards (cf. American Academy of Pediatrics, 1988; American Speech-Language-Hearing Association, 1989; Council for Exceptional Children, 1989; National Association of School Psychologists, 1987), there is no up-to-date information on the certification, licensure, and credentialing process for all 10 professions as they deliver services to infants and toddlers. The Pediatric Research and Training Center at the University of Connecticut School of Medicine collaborated with the National Early Childhood Technical Assistance System (NEC*TAS), the Carolina Institute for Child and Family Policy, and the Carolina Institute for Research on Infant Personnel Preparation to collect information on the status of personnel standards for PL 99-457. (A copy of the full report is available upon request from the authors.) In particular, information about Part H of PL 99-457 was collected in response to two questions on personnel standards:

1. What states have licensure/certification for specialists within the 10 disciplines who will serve infants/toddlers (birth to 3 years) under Part H of PL 99-457? (a) Which states have state standards? (b)

Which states use standards developed by national professional organizations?

2. What type of state standards occur across disciplines? (a) Is the licensure/certification based on coursework, degree, or competencies? (b) If degree-based, is an undergraduate or graduate degree required? (c) Are national exams used? (d) How many levels of licensure/certification are used?

To reduce confusion over terminology, "professional standard" was used as the inclusive descriptor of any predetermined criteria used to qualify personnel as eligible to provide state approved early intervention services. "Licensure and certification" were used to denote specific standards used by an agency of government to grant permission to an individual to engage in a given occupation upon finding that the applicant has attained the minimal competency necessary to ensure that the public health, safety, and welfare will be reasonably protected.

METHOD

Subjects

A telephone survey of the 50 states and the District of Columbia was conducted during the spring of 1989 to collect data on the credentialing processes and statutes governing the 10 professional disciplines described in Part H of PL 99-457. A list of the state Part H coordinators was obtained from NEC•TAS and the Carolina Institute for Child and Family Policy Program.

Procedures

The Part H coordinators were initially contacted by phone, which provided an opportunity to revise the list of current coordinators. The initial phone conversation with each coordinator consisted of a brief explanation of the survey and a request for time to schedule a 30-minute phone interview. A research assistant conducted all phone interviews. A letter confirming the interview and a copy of questions to be asked was then sent to each coordinator. These questions were to be used to gather information on each of the 10 disciplines. They included:

- What agency administers the licensure/certification process for each discipline in your state (special education, physical therapy, occupational therapy, speech pathology, audiology, nursing, medicine, nutrition, psychology, and social work)?
- Is the certification based on national standards, state regulations, or both?
- Do you have different levels of licensure/certification (i.e., provisional, standard, etc.)? If so could you describe the different levels? If you cannot describe the licensure/certification, could you direct me to a person who can?
- How would you describe the type of certification that exists (i.e., competency-based, coursework-based, degree-based)? If the licensure/certification is coursework- or degree-based, what level of coursework is required, undergraduate or graduate?
- Is there a required examination for licensure or certification?

After the list of questions was received by the Part H coordinators, many phoned the Pediatric Research and Training Center (PRTC) to express their inability to provide the appropriate answers. In most cases, the coordinator made a referral to additional state agencies or committees that might have the necessary information. Interviews were then scheduled with the appropriate persons within each state.

In states in which the agencies were unknown, an appropriate national organization was contacted for the name and address of the relevant state board. These included the

American Physical Therapy Assocation (APTA), the American Occupational Therapy Association (AOTA), the American Nursing Association (ANA), the American Medical Association (AMA), the American Psychological Association (APA), the National Association of Social Workers (NASW), and the American Dietetic Association (ADA).

After the information was received, a follow-up letter was sent to each state contact. The letter contained the state's responses to the phone questions on personnel standards for each discipline. The letter requested confirmation on the accuracy of the data and any necessary corrections. This letter also asked for information on each state's Interagency Coordinating Councils' personnel initiatives (e.g., the establishment of a committee to examine standards).

RESULTS

Forty-nine of the 51 Part H coordinators responded by phone to the questionnaire. Two coordinators did not feel they could participate in the survey at this time and did not participate in the phone follow-up interview. Thirty-three of these coordinators referred the PRTC's research assistant to other persons or agencies within their state in order to complete the questionnaire. (A list of the state contacts who assisted in the completion of the questionnaire and each of the state regulatory agencies for each of the 10 disciplines is available from the authors.) The results of the two questions will be presented separately, and the data that were collected are illustrated in Tables 1 through 8.

Question 1: State Standards for Personnel Serving Infants and Toddlers

Only one state (Idaho) reported standards specific for personnel serving infants and toddlers age birth to 3 in place for all 10 disciplines recognized under PL 99-457. The state is using Medicaid guidelines to accomplish this. Two other states (Alaska, North Carolina) reported standards specific to birth to 3 in place for special educators only, and New Jersey reported standards for eight disciplines.

Most of the states do report having standards for a majority of the disciplines for children from age birth and above. However, these standards are not specific to the unique needs of infants and toddlers. These data are shown in Table 1. All states reported standards for physical therapists, nurses, physicians, and psychologists. The disciplines least likely to have standards for services to children beginning at birth were nutrition and special education.

Table 2 contains information about the individual states' use of national standards (e.g., as authorized by a national professional organization) or state regulations to license or certify each of the 10 disciplines. There were only three instances of the use of national standards by states. These were for the disciplines of occupational therapy, audiology, and nutrition. The majority of states use a combination of both state regulations and national standards, with the exception of special educators. In all 46 states that responded to this question, special educators were certified only by state agencies. These data are summarized in Table 3.

Question 2: Types of State Standards for Personnel Under PL 99-457

The second question collected information on the types of standards in place across disciplines. Table 4 contains summary information on each state's use of either certification or licensure for each discipline. Licensure was used by the majority of disciplines, with the exception of special education, which exclusively used a certification process. This is not surprising as "certification" is the terminology adopted by state departments of edu-

TABLE 1
States Requiring Licensure/Certification/Registration for Each Discipline for Children Age Birth and Above

					Disciplines					
State	*SE*	*PT*	*OT*	*Spch*	*Aud*	*Nurs*	*Med*	*Nutr*	*Psyc*	*SW*
AL		X	—	X	X	X	X	—	X	X
AK	X	X	X	X	X	X	X	—	X	X
AZ		X	—	X	?	X	X	?	X	—
AR		X	X	X	X	X	X	X	X	X
CA		X	X	X	X	X	X	—	X	X
CO	X	X	—	X	X	X	X	—	X	X
CT		X	X	X	X	X	X	—	X	X
DE		X	X	X	X	X	X	—	X	X
DC		X	X	—	—	X	X	X	X	X
FL	X	X	X	X	X	X	X	—	X	X
GA		X	X	X	X	X	X	X	X	X
HI		X	X	X	X	X	X	—	X	—
ID	X	X	X	X	X	X	X	X	X	X
IL		X	X	X	X	X	X	—	X	X
IN		X	—	X	X	X	X	—	X	—
IA	X	X	X	X	X	X	X	X	X	X
KS	X	X	X	X	X	X	X	X	X	X
KY		X	X	X	X	X	X	?	X	X
LA	X	X	X	X	X	X	X	X	X	X
ME		X	X	X	X	X	X	X	X	X
MD	X	X	X	X	X	X	X	X	X	X
MA		X	X	X	X	X	X	—	X	X
MI	X	X	—	—	—	X	X	—	X	X
MN	X	X	—	—	—	X	X	—	X	X
MS		X	X	X	X	X	X	X	X	X
MO		X	—	X	X	X	X	—	X	—
MT		X	X	X	X	X	X	—	X	X
NE	X	X	X	X	X	X	X	X	X	X
NV	X	X	—	X	X	X	X	—	X	X
NH		X	X	X	X	X	X	—	X	X
NJ	X	X	X	X	X	X	X	—	X	—
NM		X	X	X	X	X	X	—	X	—
NY		X	X	X	X	X	X	—	X	X
NC	X	X	X	X	X	X	X	X	X	X
ND		X	X	X	X	X	X	X	X	X
OH	X	X	X	X	X	X	X	X	X	X
OK	X	X	X	X	X	X	X	X	X	X
OR		X	X	X	X	X	X	?	X	X
PA		X	X	X	X	X	X	—	X	X
RI		X	X	X	X	X	X	—	X	X
SC		X	X	X	X	X	X	—	X	X
SD		X	X	X	X	X	X	?	X	X

TABLE 1
Continued

	Disciplines									
State	*SE*	*PT*	*OT*	*Spch*	*Aud*	*Nurs*	*Med*	*Nutr*	*Psyc*	*SW*
TN		X	X	X	X	X	X	—	X	X
TX		X	X	X	X	X	X	X	X	X
UT	X	X	X	X	X	X	X	X	X	X
VT	X	X	—	X	X	X	X	—	X	X
VA		X	—	X	X	X	X	?	X	X
WA		X	X	—	—	X	X	X	X	X
WI	X	X	X	X	—	X	X	—	X	—
WY		X	—	X	X	X	X	—	X	X
Total	19	51	40	46	45	51	51	18	51	44

X = Certification/Licensure/Registration required
— = Discipline not regulated in state
? = Information unavailable
SE = Special Education
OT = Occupational Therapy
Aud = Audiology
Med = Medicine
Psych = Psychology

PT = Physical Therapy
Spch = Speech Pathology
Nrs = Nursing
Nurt = Nutrition
SW = Social Work

TABLE 2
Licensure/Certification/Registration for Each Discipline Based on State Regulations (S), National Standards (N), or Both (B)

	Disciplines									
State	*SE*	*PT*	*OT*	*Spch*	*Aud*	*Nurs*	*Med*	*Nutr*	*Psyc*	*SW*
AL	S	B	—	B	B	B	B	—	B	S
AK	S	B	?	B	N	B	B	—	B	B
AZ	S	B	—	B	?	B	B	?	B	—
AR	S	B	B	B	B	B	B	B	B	B
CA	?	S	N	B	B	?	B	S	S	S
CO	S	B	—	S	S	S	B	—	S	S
CT	S	B	B	B	B	S	B	—	B	B
DE	S	B	B	B	B	S	B	—	B	B
DC	S	B	N	—	—	S	B	B	B	B
FL	S	B	B	B	B	S	B	—	B	B
GA	S	B	B	B	B	B	B	B	B	B
HI	S	B	B	B	B	S	B	—	B	—
ID	S	B	B	B	B	S	B	N	B	S
IL	S	B	B	S	?	S	B	—	S	S
IN	S	B	—	S	B	S	B	—	B	—
IA	S	B	B	B	B	S	S	B	B	B
KS	S	S	S	S	S	B	B	?	B	S
KY	S	?	?	B	B	?	S	?	B	S

TABLE 2
Continued

State	*SE*	*PT*	*OT*	*Spch*	*Aud*	*Nurs*	*Med*	*Nutr*	*Psyc*	*SW*
	Disciplines									
LA	S	B	B	B	B	S	B	B	B	S
ME	S	B	B	B	B	B	B	B	B	B
MD	S	B	?	B	B	S	S	B	B	B
MA	S	S	B	B	B	B	B	—	S	B
MI	S	S	—	—	—	S	S	—	S	B
MN	S	S	—	—	—	?	B	—	S	B
MS	?	B	?	B	B	?	B	S	S	B
MO	S	S	—	B	B	S	B	—	B	—
MT	S	S	B	B	B	S	B	—	B	B
NE	S	S	S	B	B	S	S	?	S	B
NV	S	S	—	S	S	S	B	—	B	B
NH	S	S	S	S	S	S	B	—	B	S
NJ	S	B	—	B	B	?	B	—	B	—
NM	S	B	B	B	B	B	?	—	B	—
NY	S	B	B	B	B	B	B	—	B	S
NC	S	B	?	B	B	?	?	?	S	B
ND	S	S	B	B	B	S	S	B	S	S
OH	S	S	B	B	B	B	B	B	S	B
OK	S	B	S	B	B	B	B	S	B	B
OR	S	S	B	B	B	?	B	?	B	B
PA	S	B	?	S	S	?	B	—	B	B
RI	S	S	B	B	B	S	B	—	S	S
SC	S	S	?	B	B	?	?	—	S	B
SD	S	S	B	S	S	?	B	?	?	B
TN	S	S	B	B	B	?	S	—	B	B
TX	S	S	S	B	B	?	S	B	S	B
UT	S	S	S	B	B	?	B	S	S	S
VT	S	B	—	S	S	S	B	—	B	S
VA	S	S	—	B	B	?	B	?	B	B
WA	S	B	B	—	?	B	B	S	B	B
WV	S	?	B	—	B	S	B	?	B	B
WI	S	B	B	S	—	?	B	—	S	S
WY	S	S	—	B	B	S	B	—	S	B

? = Information unavailable
— = State does not use credential

ucation to regulate personnel providing services through a school system.

Table 5 contains summary information on each state's use of either coursework, degree, or competencies as part of personnel standards for each discipline. The majority of states use a degree-based process, with only 4 instances of a competency-based process and 10 instances of a combination of competencies and coursework.

Table 6 contains summary information on whether those states that have standards based on a degree use an undergraduate or graduate degree. Graduate degrees are most

TABLE 3
States Using National Standards vs. State Regulations in State Laws for Each Discipline

Discipline	*N*	*National*	*State*	*Both*
Special Education	46	0	46	0
Physical Therapy	48	0	21	27
Occupational Therapy	32	2	6	24
Speech Pathology	46	0	10	36
Audiology	44	1	7	36
Nursing	35	0	22	13
Medicine	48	0	8	40
Nutrition	16	1	5	10
Psychology	40	0	17	33
Social Work	35	0	15	30

TABLE 4
States Using a Credential for Each Discipline

Discipline	*N*	*License*	*Certificate*	*Both*
Special Education	48	0	48	0
Physical Therapy	51	51	0	0
Occupational Therapy	46	34	0	0
Speech Pathology	51	27	10	9
Audiology	49	31	6	7
Nursing*	51	41	1	9
Medicine*	51	51	0	0
Nutrition	44	18	0	0
Psychology*	51	33	2	16
Social Work	50	34	0	10

* = Some data obtained through national organization

TABLE 5
States Using a Coursework, Degree, or Competency-Based Credentialing for Each Discipline

Discipline	*N*	*Degree*	*Competency*	*Both*
Special Education	47	46	1	0
Physical Therapy	49	49	0	0
Occupational Therapy	34	34	0	0
Speech Pathology	46	44	1	1
Audiology	44	39	2	3
Nursing	41	39	0	2
Medicine	51	51	0	0
Nutrition	18	18	0	0
Psychology	51	48	0	3
Social Work	44	43	0	1

TABLE 6
States Requiring Graduate or Undergraduate Level Education for Certification/Licensure in Each Discipline

Discipline	*N*	*Graduate*	*Undergraduate*
Special Education	48	12	36
Physical Therapy	49	1	48
Occupational Therapy	34	5	29
Speech Pathology	46	43	3
Audiology	44	40	4
Nursing	41	7	34
Medicine*	51	51	0
Nutrition	19	8	11
Psychology*	51	51	0
Social Work*	44	43	1

* = Some data obtained through national organization

prevalent for psychology, social work, medicine, speech, and audiology.

Table 7 summarizes the data collected on the use of national or state exams within the licensure/certifications process. Special educators are the only discipline in which the majority of states do not require an exam as part of the certification process.

Table 8 contains summary information on the levels within each state's licensure/certifications process. Eight states report social work having the most levels within their licensure/certification process (four or more levels). Most disciplines have two levels of standards, with the exception of medicine, speech, audiology, and nutrition.

In response to our inquiry about personnel initiatives within each state, 35 states reported having a personnel preparation committee in operation as part of their Interagency Coordinating Council for Part H, and 4 states are in the process of beginning such a committee.

DISCUSSION

PL 99-457 has stimulated many early intervention service delivery changes for infants

TABLE 7
Types of Exams Used for Each Discipline in Each State

Discipline	*N*	*National*	*State*	*Unspecified*	*None*
Special Education	46	11	7	0	28
Physical Therapy	49	18	28	2	1
Occupational Therapy	33	24	7	2	0
Speech Pathology	36	25	6	1	4
Audiology	34	26	5	1	2
Nursing	36	14	21	1	0
Medicine	49	39	9	1	0
Nutrition	18	10	6	0	2
Psychology	48	29	17	1	1
Social Work	44	16	10	14	4

TABLE 8
Certification/Licensure in Each Discipline for Each State

Discipline	N	*1 level*	*2 levels*	*3 levels*	*4+ levels*
Special Education	48	23	20	3	2
Physical Therapy	48	19	28	1	0
Occupational Therapy	34	10	22	1	1
Speech Pathology	46	40	5	1	0
Audiology	45	40	5	0	0
Nursing	41	11	25	3	2
Medicine	51	51	0	0	0
Nutrition	18	13	5	0	0
Psychology	50	32	15	3	0
Social Work	44	15	11	10	8

and toddlers with disabilities and their families. Unfortunately, there is a lack of trained personnel available to implement these services. At present, there are few regulatory standards in place specific to personnel providing services to infants and toddlers. This fact has been substantiated by state Part H coordinators for infant and toddler services, as well as by regulatory agencies within each state.

The data collected through this survey suggest that many states are using personnel standards that regulate services to a broader age range than birth to 3. While this status assures that certified or licensed professionals will be used to deliver services (and in fact, meet the regulations of the law), many concerns remain as to the appropriateness of these standards to regulate services that should be specialized for infants, toddlers, and their families (Smith & Powers, 1987).

Three states (Idaho, Alaska, North Carolina) have begun to establish standards specific to a new occupational professional employed as an "infant specialist" to deliver services under Part H of P.L. 99-457. This type of position may be filled by professionals from a variety of disciplines who have specialized training about infants, toddlers, and their families. North Carolina, in particular, has adopted a system that is competency-based and contains four levels of specialization obtainable through formal preservice or inservice activities.

Nationally, professional organizations are drafting position papers to assist the field of early intervention in developing personnel standards. For example, the Division of Early Childhood, Council for Exceptional Children, has a position paper that suggests the content necessary for an early childhood special educator to qualify for entry-level certification as well as advanced certification level (McCollum et al., 1989). Likewise, the American Physical Therapy Association has developed proposed competencies for physical therapists who work in a Neonatal Intensive Care Unit (Scull & Dietz, 1989), and the American Occupational Therapy Association has new early intervention guidelines (1989a). The National Center for Clinical Infant Programs is also developing recommendations for professionals who will serve as early interventionists (Fenichel & Eggbeer, in preparation). These recommendations will serve as guides to states as they develop standards and systems of comprehensive personnel preparation. It would seem reasonable to suggest that state Interagency Coordinating Councils use the recommendations of these national organizations when preparing both the comprehensive plan for personnel development and any specific standards for professionals serving children birth to 3.

Our results show that most licensure/certification is based on coursework as opposed to competencies. Competency-based or performance-based standards are those which require the accomplishment of observable intervention-related behaviors. This type of standard seems inherently more appealing as we attempt to plan for comprehensive quality early intervention services. However, many issues must be addressed by states requiring competency-based standards (e.g., assessment or observation process, cost), and these issues may discourage most states from adopting this method of regulation.

The licensure/certification in place through coursework differs according to profession as to whether the degree is a graduate or undergraduate degree. This status raises the issue of different levels of entry skills among those professionals providing service to infants/toddlers and their families. This issue may be critical, as it is recommended that most early intervention services be delivered through a team approach (Bailey, 1989). The success of the team is most often based on both the skill level and willingness to share expertise among team members who represent different disciplines. An issue is also raised as to the different pay scales that may be in place for professionals from different disciplines and the concerns this may create for program administrators intent on providing team-based services with limited resources.

Caution must be noted in that these data have several inherent limitations. First, they are based on reports from a variety of sources. While state representatives were given opportunities to correct any inaccuracies in the reporting, misinformation or wrong interpretations cannot be ruled out. Second, there still is much confusion about the "highest" standard in place for any given profession. This may have also led to misinterpretation by the survey respondents. Last, the data were collected during the spring of 1989. Many states were just beginning to address personnel needs and requirements. There may have been many changes within both professions and states since that time. For example, California has completed a comprehensive report and guide to professional standards and personnel preparation in the period since this survey was completed (Hanson, 1989).

CONCLUSION

The personnel shortage occurring in early intervention is compounded by the lack of personnel standards specific to professionals providing services to the birth-to-3 age group. The data collected by this survey suggest that each lead agency and Interagency Coordinating Council (ICC) for Part H must begin to systematically address the personnel needs of PL 99-457 if infants and toddlers with disabilities, and their families, are to be provided quality services.

To fully implement Part H, states should consider adopting personnel standards specific to the birth-to-3 population. While the law requires personnel standards based on the highest requirements of the state applicable to the profession or discipline in which a person is providing early intervention services, most would argue that states should develop standards that relate to the unique needs of infants, toddlers, and their families (Smith, 1988). In addition, states are given the authority to specify the occupational categories required to provide early intervention services to children and families eligible under Part H.

There are a number of actions that can be initiated by each state's Part H lead agency and ICC as it begins to address the development of both a comprehensive system of personnel development and the development of standards specific to the birth-to-3 population. These include:

1. Establishing a personnel preparation committee under the ICC that includes representatives from state licensure boards/agencies, higher education, and national and state professional agencies. These representatives will ensure that the state Part H lead agency and ICC are getting information from a variety of sources as they develop both the Comprehensive System of Personnel Development (CSPD) and personnel standards.
2. Inviting members from the state regulatory commissions for licensure/certification to serve on the ICC or a personnel subcommittee. In many states, the names of these agencies, as well as contact people from these agencies, were unknown to Part H personnel.
3. Establishing a Higher Education Council for Infant Intervention Personnel Preparation. Representatives from university and college personnel preparation programs across the 10 disciplines recognized under PL 99-457 can meet regularly to discuss personnel preparation strategies. These councils can begin to assist in the development of the CSPD as well as preservice curriculum that will meet any birth-to-three personnel standards. For example, the states of Connecticut, Virginia, and Indiana currently have councils, and Illinois, New Mexico, and New York have proposed to initiate councils.
4. Utilizing models of specialized standards specific to personnel providing early intervention under Part H of PL 99-457. Since most states have not developed specialized standards, there currently is a lack of such models. Those states intending to develop age-specific standards should review the standards developed by the four states that have specialized requirements for personnel providing early intervention to infants, toddlers, and their families.
5. Developing the state's CSPD for Part H of PL 99-457 in tandem with certification/licensure standards for personnel. This recommendation seems self-evident; however, we suggest that states link their training activities to competency-based regulatory standards as one way of insuring the quality of personnel who will deliver early intervention.
6. Developing the state's CSPD for Part H of PL 99-457 in tandem with the Part B of PL 99-457 CSPD for special education and related services, as well as any other state plan for personnel development.

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FINANCING RURAL SPECIAL EDUCATION

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An Alternative to the Traditional Funding of Small, Rural Schools

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There are good reasons to expect major changes in the financing of small, rural schools in the near future. States are imposing new curricular requirements, particularly for secondary schools; they are relying more on categorical rather than general forms of aid for education; and the form and level of the Federal government's commitment to education is changing. The rural economy is in flux; educational technology is developing rapidly; and there appears to be new thinking about the wisdom of consolidating or merging small, rural school districts. All these changes will affect how small, rural schools will be financed.

This paper, which is divided into three sections, gives an overview of policy issues that need to be considered as these changes take place. The first section describes the traditional approach to financing rural schools and its inherent difficulties. The second introduces a competing "new-view," replete with its own serious, but different problems. The final part discusses the differences between the two and speculates about future developments. Although each approach is flawed, it would be a mistake to assume that the new view is necessarily better than the old one. In fact, the differences between them are striking and instructive, but until some of the inherent difficulties that affect both are resolved, it is impossible to decide which is superior. Since the "new" approach is likely to be increasingly evident in years to come, it is important to be aware of its shortcomings and equally important not to think that the hard work of crafting a coherent fiscal policy for small, rural schools has already been accomplished.

The Traditional Approach

Traditional policy depends heavily on the idea that it costs more to do the same thing in a smaller school or district than in a larger one. For many years this idea has dominated policymaking on small, rural schools. The logic is disarmingly simple. If small schools and districts are more costly to operate, why not simply turn them into larger ones and pocket the savings? According to this view, consolidating school districts often leads to greater efficiency and greater equity for students and taxpayers.

This kind of thinking results in the traditional rural school finance policy: encourage enlargement of school districts through some combination of mandates, fiscal incentives, and admonitions, while providing additional aid to those districts for whom reorganization is not a workable option.

This policy suffers from a serious, inherent difficulty. Additional aid (whether called a small scale adjustment, sparsity aid or isolation aid) undercuts the effort to create larger administrative units. This leads to an extensive, unfinished debate over eligibility standards in which both sides try to distinguish between school districts that are small by necessity rather than through choice.

There are two reasons that establishing eligibility standards as a means of solving this problem have failed. First, there is a lack of consensus regarding how to handle eligibility. Gerald Bass (1980) found that States use no fewer than 11 different criteria to decide which school districts are eligible for some form of small, rural school aid. Bass' list included criteria such as distance, travel time, population density, topographical features, and climate. Moreover, Lyle Wright (1981) reported large variations in what constituted eligibility even among those States utilizing the same broad criteria.

Second, political and social factors are conspicuously absent from the list, and yet, as recent research shows, such factors can influence the outcome of attempts to reorganize school districts (Monk and Haller, 1986; Peshkin, 1982). In a State where local autonomy regarding reorganization is important, a school district may be small because its neighbors refuse to join it. The State's emphasis on geographical barriers to reorganization may not be relevent to such an "unwanted" school district.

Another problem associated with the traditional approach involves dispositon of the extra financial burden associated with small size. A State that refuses to provide aid to a small district on the grounds that its small size is unneccessary puts fiscal pressure on the reluctant school district. The thinking seems to be that taxpayers will bear any burdens necessary to maintain the small school district. Moreover, policymakers seem to feel this is acceptable since the refusal to reorganize often arises from taxpayers. This reasoning is seriously flawed since the burden need not fall solely (or at all) on the shoulders of taxpayers. Students may bear the consequences of the State's refusal to offset the costs of small size. In such cases, the State, by refusing to provide additional aid, denies equal educational opportunities to students who happen to attend small schools supported by taxpayers who resist reorganization.

Finally, there can be problems with the steps States take to encourage reorganization. When financial incentives are used, the effects of additional State dollars are combined with the effects of the resulting reorganization. Many of the benefits commonly associated with reorganization (new facilities, expanded curricular offerings, and lower taxes) are at least partly attributable to whatever additional aid accompanies the reorganization. In these situations, one wonders what would have happened had the additional State aid arrived without the accompanying reorganization requirements.

The New Approach

The new approach questions the nature of economies in education based on size and takes seriously the claim that modern technologies are rapidly eroding size economies.[1]

The new view is that small, rural schools are not inherently inefficient; rather, they are different with unique needs to which States should attend. The new approach sidesteps the three greatest weaknesses of the traditional view: the need to distinguish between districts and schools that are small out of choice rather than necessity, shortchanging students as a by-product of attempts to encourage reorganization, and the problem of confusing the effects of mergers with those of additional State aid.

Although the new approach solves these problems, others arrive in their stead. If size economies really are as unimportant as the new approach suggests, on what grounds can special financing policies be justified? Since the existence of size economies has always been an important rationale for special State treatment of small, rural schools, advocates of the new view risk seriously undercutting their case for providing assistance to these schools when they question the importance of size economies.

Attempts have been made to resolve this problem by stressing that difficulties for small, rural schools derive from their rural status rather than from their small size. This represents a sharp departure from the past when it was sufficient to show that costs were higher in small, rural schools. In the traditional view, understanding why costs are higher is less important since these costs justify eliminating small administrative units. If, on the other hand, small units are likely to remain (as they are under the new view), it becomes more important to understand the sources of the extra costs these districts face, as well as the nature of the State's responsibility to them.

There are, however, difficulties associated with this new approach. Problems associated with schools' rural origins are not well understood and are often difficult to separate from their small size. For the new view to succeed, analysts must somehow show that these rural-based problems are substantial, remediable through State policy, and unrelated to small size. This is no trivial task.

The implications for State financial policy are also strikingly different under the new view. Historically, districts that receive State aid because of small size or their rural setting exercised considerable discretion over these funds. The new view emphasizes a more categorical approach to funding in which the State provides resources to resolve specific problems in given districts. These resources, which come with strings attached, are part of the trend among the States to hold districts more accountable for the funds they receive.

The new approach's emphasis on categorical funding has advantages as well as disadvantages. Although districts may lament the loss of autonomy over how they spend their funds, the categorical, problem-oriented nature of the new approach can help important political coalitions to form. This is true because problems that trouble small, rural districts are not necessarily unique to them. The new approach calls for providing relief wherever a given problem is found, regardless of the setting—rural, suburban, or urban. Thus, the new approach gives rural legislators common cause with suburban and urban representatives whose districts face similar problems.

Overview and Discussion

More coherent policies regarding small, rural schools depend upon resolving the contradictions that plague both the traditional and the new approach. Progress in both areas is discussed below along with suggestions for future work.

Progress and the Traditional Approach

By broadening requirements to include social and political factors (as well as more conventional geographic considerations), the traditional approach could better identify what necessarily counts as a small school. A State could, for example, allow districts to demonstrate their *individual* willingness to reorganize with neighboring districts by passing a referendum. Should a district pass such a referendum but subsequently fail to attract a willing partner, it would become eligible for additional State aid as a necessarily small school.

The traditional approach would also benefit from greater tolerance for partial reorganization. Too often the consolidation of schools and districts is an all-or-nothing activity from which no retreat is possible. Greater flexibility and deference to local conditions in the design of cooperatives and other organizational structures could encourage substantial progress.

Progress and the New Approach

As indicated above, the new approach includes efforts to identify and measure specific factors contributing to the difficulties of operating small, rural schools. These factors, which come in various forms, are attracting increasing attention. What follows is a brief discussion of some of the promising directions in which the new approach is heading.

- ***Discrepancies in measures of ability to pay.*** Large discrepancies can exist between property and income-based measures of school district fiscal status. In certain kinds of rural areas it is common to find high levels of property wealth, but low levels of income. This is particularly common in resort areas. Although it has nothing to do with the size of a district per se, this can discriminate against property rich/income poor districts if State aid is tied solely to property wealth. Such districts would usually receive more aid if the measure of the district's economic status took account of the low level of local income. Of course, paying attention to these discrepancies requires the availability of up-to-date income data for each school district in a State. Augenblick and Nachtigal (1985) and Lamitie (1987) have recently underscored the importance of improving the availability of such data.

- ***Recruitment and retention of teachers.*** Since teachers' salaries in small, rural schools tend to be low and their work load heavy, it is not surprising that teacher quality and turnover are problems. These problems are especially troubling because the negative effects of an incompetent teacher seem more difficult to contain in a small, rural school than elsewhere (Bridges, 1986).

  Many proposals are being made so that States can intervene to alleviate this problem. One such proposal provides for categorical aid to help teachers become certified in multiple subjects. A more broadly trained faculty would give administrators flexibility that they would not otherwise have. There are also proposals to encourage districts to exchange teachers and administrators for fixed periods of time. These exchanges aim at dispelling the parochialism that is allegedly common in small, rural schools. However, these proposals would apply only to districts where parochialism was a problem. Even densely populated urban districts could qualify for such programs if they could demonstrate that parochialism was a difficulty. Finally, States are making efforts to compensate teachers directly—by raising the lowest teacher salaries in the State.

- ***Enrollment fluctuation.*** Fluctuation in the number of enrollees (from one year to the next) is a by-product of small size. This interferes with administrators' ability to plan, which makes it more difficult to administer small, rural schools. Although it is unclear how to remedy this problem, it is a difficulty that the State could address. This problem, however, is not unique to small school districts. Even in large districts, instability often afflicts small programs and units. State intervention to address these difficulities could also help large districts with many small programs or internal units. Were the State to become more sensitive to internal measures of size, large districts would be treated differently depending on how they were organized internally.

  In this case, one of the problems plaguing the new approach arises quite clearly. Size once again slips into the debate. Those who advocate such adjustments must once again contend with assertions that small size is inefficient and that reorganization into larger units is preferable.

- ***Technology development.*** Some favor using public funds to develop technologies to overcome the problems of small, rural schools. This argument stresses the small market share that these schools occupy and the uniqueness of their needs. For example, software that enables a single person to teach several different foreign languages would probably help small, rural schools enormously. The low demand for such software, however, is likely to preclude even modest efforts to produce it. If technology holds the key to the future of small rural schools, demand may be insufficient to develop fully whatever potential is there.

- ***Scheduling flexibility.*** If school consolidation usually benefits atypical students who enroll in advanced specialized secondary courses,[2] are there not alternative ways of providing these courses without reorganizing the whole school system? States could, for example, facilitate the delivery of these courses at non-conventional times such as on weekends or during the summer.

Other possibilities include residential learning centers to meet such students' special needs. Proposals for residential learning centers tend to be controversial since they call into question the viability of the sending school district. One possible and promising solution would be for the State (or perhaps region) to offer part-year courses of study in a residential school. For example, a student in a small, rural school who wanted to study advanced mathematics and science might leave home to attend such a school for one semester during the junior year. This might or might not be followed by a second semester of study during the senior year. The summer offers additional possible periods of sustained study. Finally, there is Ernest Boyer's proposal for portable science and other resource classrooms that would arrive at a particular district for a sustained period (Boyer, 1983).

- ***Improved guidance.*** Low levels of aspiration often characterize small, rural schools, but are certainly not confined to them. This problem cuts across rural-urban boundaries. The reasons for low aspirations may differ, but the State can address them simultaneously through a categorical form of aid that responds to local circumstances. For example, for high schools whose graduates pursue unusually narrow postsecondary activities, New York State is currently considering paying for supervised student visits to distant universities. Allocations of such aid would go to any district where student aspirations were demonstrably low. It is a good example of a program that could be supported by rural, as well as by urban political interests.

Final Comments

Each of the approaches sketched above has limitations. The new approach can be viewed as an outgrowth of frustration with the traditional one. A consensus on what constitutes a necessarily small school entitled to additional general State aid does not seem close at hand. The future looks more promising for the problem-oriented new approach. If educational technology further reduces the scale economies in education, problems in small, rural schools are likely to lend themselves more to precise surgical-like intervention than to broad initiatives such as complete district reorganization.

It is too early, however, to evaluate technology's success in reducing size economies. So long as it costs more to do the same thing in smaller, as opposed to larger settings, there will be a case to be made for the traditional policy approach.

Assessing the magnitude of size economies, the conditions under which they can be realized, and the nature and seriousness of other difficulties (having nothing to do with size) that small, rural schools face will help immensely in the important but difficult task of developing a coherent State policy on small, rural schools.

End Notes

[1] One of the standard criticisms of size economy research is that it fails to take account of all costs that accompany the transformation of small schools into larger ones. Transportation costs play an important role in this debate. (For a good example of this line of argument, see White and Tweeten, 1973.) More recently, Monk (1987) argues that even if economies of size are available, it is by no means obvious that school administrators and governing boards will routinely take advantage of them. This argument, which is compatible with the traditional emphasis on reorganization, carries implications for the training and practice of educational administrators.

[2] Only small percentages of students in large high schools enroll in classes that are unavailable to their peers attending small high schools. See Monk (1987).

Finally, I am indebted to William Deming, Emil J. Haller, and John Skawski for their insightful comments on an earlier draft of this paper.

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Economic Support for Education in Rural School Districts

Digest 4-89

THIS Digest synthesizes recent findings and enduring features that characterize the economic climate in which rural schools operate, and it reports traditional strategies used to create greater economic support for rural school districts. It aims to relate the issues of rural culture and community to the economic support of adequate services in rural schools.

Why has the degree of economic support been an ongoing concern of rural educators and of state policymakers?

The yardstick of adequacy in mass education—the expectation that all the children of all the citizens of a nation will attend school—is the expectation that schools everywhere will function in the same way to serve all students. This is a modern phenomenon closely associated with the steady economic growth that has characterized the development of cities, but many rural areas have not experienced growth during recent decades. Instead, they have been caught in cycles of economic boom and bust, or in a trend of steady decline. Under these circumstances, rural superintendents have consistently reported that adequate financial support for their districts is difficult to obtain.

Nonetheless, *rural areas* are the places in which mass education developed its early roots in the United States during the nineteenth century. Studies of contemporary nonmetropolitan communities have shown that they spend at least as high a proportion of their personal income on schools as metropolitan communities (e.g., Monk & Bliss, 1982). Incomes in rural areas, however, are low, and the net result of this traditional interest and contemporary effort does not combine to support adequately the work now expected of rural schools.

What state aid provisions have been suggested to increase the degree of economic support for rural schools?

Three types of state funding mechanisms are used to equalize economic support among all school districts in a state (Jess, 1980):

- high-level foundation programs, by which the state makes up the difference between local support and a prescribed minimum level;
- augmented foundation programs, which provide additional revenues based on a combination of district wealth and tax effort; and
- power equalization programs, which guarantee minimum revenues based on tax effort, but "recapture" revenues from districts with high local revenues.

According to Jess (1980), of the 25 states using any of these methods, disparities were reduced in 17, whereas disparities increased in seven. (They remained unchanged in one.) However, disparities were most consistently reduced in states that adopted power equalization programs. According to data reported by Wright (1981), 13 states adjusted funding to rural schools based on isolation and seven states made adjustments based on populaiton sparsity.

What is the effect of state and federal governments' revenue contributions on rural school districts?

Since the 1930s, state governments have played an increasingly large role in financing local schools. Since the 1950s, steady changes in state funding formulas have tried to take into account the special needs of some districts—for example, being small in size or serving many disadvantaged children. Overall, the effect of state efforts has been to lessen the fiscal discrepancies between rich and poor school districts.

The funds provided by the federal government to help at-risk students also help lessen discrepancies, but by no means close the remaining gap (Orland, 1988). Some reports, however, indicate that rural schools have not received a share of federal assistance proportional to either the numbers of students they serve or their needs (e.g., Gjelten, 1980).

Compounding this problem, the contributions of state governments and the federal government are often tied to new programs (designed by them) that may be particularly difficult for rural districts to implement. The new difficulties that confront rural school districts in operating some special education programs are a case in point.

The additional responsibilities imposed by state and federal mandates are intended to ensure that schools everywhere will provide similar programs in similar ways. Under these circumstances, additional aid may be welcomed as a mixed blessing by rural schools and communities. The funds benefit local economies, but require school staff to redouble their efforts to be efficient.

Why haven't all states adopted equalization measures?

Rural schools have been faulted for inefficiency because, even as their services were viewed as inadequate, their per-pupil expenditures were viewed as too high. A goal of the massive consolidations that occurred in this century was to eliminate this alleged rural inefficiency. Today, many rural educators believe that the push for efficiency has gone too far.

The emerging view is that rural and small schools are inherently more expensive to operate than other schools. Population sparsity,

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the appropriately small scale of rural schools, and the special needs of rural students and communities need to be accommodated with flexible regulation and ample economic support. Many rural educators hope that schooling will be recognized as an essential investment in an infrastructure that will support the kind of economic development that many rural communities have never experienced.

For the purpose of funding rural schools for such a mission, some observers believe that it will be necessary to develop a typology that accounts for the diversity among all school districts, a diversity most dramatically exhibited by rural school districts (Augenblick & Nachtigal, 1985). Such thinking may have influenced the passage in 1988 of a new school finance law in Colorado, which establishes a classification based on eight types of school districts. Much work needs to be done, however, to provide empirical justification for any particular typology.

How is economic support related to issues of rural culture and community?

The long history of interest by rural communities in their schools contrasts markedly with the more recent history of inadequate funding for rural schooling. When the expectations of rural schools were different, their funding was not perceived to be inadequate. State and federal initiatives have not—and perhaps cannot—resolve this dilemma, since their mandates, framed to apply to all schools, impose burdens that may be out of scale to the benefits they deliver to rural schools.

Such problems indicate a failure of policy to comprehend what rural schools, and the communities and cultures that stand behind them, are really like. Equalization of funding, or even a comparatively high level of funding for rural school districts, will not change the disparity of rural and urban cultures and economic activity.

Some educators (e.g., Wigginton, 1985) seek to cultivate a sense of community, based on students' direct involvement with the features of local culture and history. Wigginton's methods have been called "cultural journalism," because students develop publications about their involvement. As cultural journalists, they not only learn basic skills in a meaningful context, but they begin to understand and critique the world in which they live, according to Wigginton.

Other educators (e.g., Gatewood & DeLargy, 1985) believe that it is important for rural schools to take an active role in cultivating economic activity in rural communities, and new studies of "business incubation" have begun to appear (e.g., Weinberg, 1988). These programs provide seed-money and technical assistance to start businesses intended later to become self-supporting.

Still others stress the importance of understanding the national and global context in which rural schools and economies operate. According to them, the impoverishment of rural areas is a predictable, persistent consequence of the economic relationship between rural regions and centers of metropolitan finance and industry (e.g., Silver & DeYoung, 1986).

They suggest that rural citizens may legitimately view the schooling of their children as something apart from the agenda of mass education. Instead of regarding their children as the nation's "most precious natural resource," rural parents may want their children to learn fidelity to such rural traditions as neighborliness, hard work, self-reliance, and close relationship to the natural environment (e.g., Wigginton, 1985).

The common theme in these differing views is that the expectation that rural schools will deliver the same services in the same ways as other schools is bound to end in frustration, since the community will and the economic support necessary to meet the expectation may not exist. Hence, the issue of adequate economic support for education in rural districts depends on the purposes conceived for rural schools and on who conceives those purposes. Some rural teachers have taken a lead in demonstrating viable rural alternatives.

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incentive for efficiency in local transportation management. Since funding is based on average costs adjusted for linear density, districts with expenditures above average level represented by the cost/density efficiency curve are reimbursed for a lower proportion of costs than districts whose efficiency is below average. Districts whose costs are well above or below predicted levels are identified. State assistance could be offered to districts whose pupil costs are well above the predicted level to identify possible inefficient practices. Districts with costs well below average could be checked to verify that service is adequate.

RECOMMENDATIONS

From this study the following recommendations are made to benefit not only rural schools and/or school districts but the state as a whole in the transportation of public school children.

1. The entire transportation calculation should be computerized in order to standardize calculating procedures. The formula to be used is a quadratic equation, which would produce a curvilinear relationship, mathematically expressed as $Y = AX + BX^2 + C$. The points for the formula would be produced by plotting the cost of transportation per pupil on the Y–coordinate and the linear density on the X–coordinate for each school district.

2. The states should provide full funding for the formula adjusted cost of pupil transportation.

3. The states should distribute to the local district 5.0 times the predicted value of the projected curve for each child who is classified under the special education program as severely handicapped and cannot be transported on regular buses. For example: if the predicted value of the calculation of the equation was $166.30 for each regular transported student, then the district would receive $831.50 for each special education child who needed to be transported by special means.

4. The states should allot capital outlay funds to the local district based on the cost of the bus depreciation over a ten–year period. This would allow the local district to have a revolving school bus purchase plan and to keep all buses in good working order.

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School Facilities and State Mechanisms That Support School Construction: A Report from the Fifty States

DAVID S. HONEYMAN

INTRODUCTION

THROUGHOUT the United States there is a growing concern that school facilities are woefully inadequate and the methods used to finance America's educational infrastructure are deficient. School districts continually experience tax limitation referenda, board of education resignations and recall elections, as well as failed bond elections for the purpose of building, renovating, and repairing school facilities.

The magnitude of the problem is enormous and is rapidly becoming the educational issue of the 1990s. School districts across the country operate school facilities that are often unsafe, inadequate for enrollment, and inaccessible to special populations of students. Many school buildings exist that need asbestos abatement, air quality improvements, new roofs, electrical upgrades, and other physical improvements. Increased demands for classroom space resulting from state–mandated class–size reduction plans, new instructional programs for preschool and high–risk students, space required for the improved uses of technology in the classroom, and new developments in science laboratories continue to compound this problem.

A sizable proportion of our nation's urban, suburban, and rural school buildings are in need of repair, modernization, or replacement. Reports from New Jersey, Kansas, Pennsylvania, and Michigan have indicated situations where structural damage resulting from age compounded by improper or deferred maintenance has forced the closing of a number of school buildings. There have even been reports detailing the collapse of entire sections of schools. Concern for the issues that surround the complex process of financing school buildings is growing. There is an increasing amount of literature that suggests that many school districts are confronted with insurmountable resistance to provid-

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ing adequate and exemplary facilities for school children. While the broader issues of adequacy and equity are found throughout the school finance literature, there is a small and growing body of research that addresses these concepts and extends the doctrine of fiscal neutrality to school facilities as well as educational programs (Honeyman, 1985).

Facilities provide a particularly difficult issue for many rural communities because of their extraordinarily high cost in relation to other education expenditures and because of the absence of state assistance in many states. Repeatedly, the literature emphasizes a backlog of needs among districts, and their relative ability to pay for unmet needs is documented. The American Association of School Administrators (1983), in cooperation with the Council of Great City Schools and the National School Boards Association, reported estimates for maintenance backlog in excess of $25 billion in the nation's schools, and other research has focused on the nation's rural school districts (Wolves, 1989; Honeyman, 1988b). These concerns are vital to rural schools where the average age of buildings is rapidly increasing and where the continued utility may be questioned.

The literature indicates that modernization and replacement are growing needs, while other uncontrollable influences such as handicapped accessibility, Title IX, and expanding curricular needs including technology have outstripped local budgets (Thompson, 1988). Districts have typically been unable to meet such needs from reserve funds or current expenditures. The concept of deferred maintenance and construction has yielded huge amounts of unmet needs in the various states. For example, the Oklahoma State Department of Education estimated that more than $622 million in needs had gone unaddressed in that state, and if all districts were to extend themselves to the legal maximum for capital outlay purposes, needs would still exceed $125 million (Oklahoma, 1987). In 1987, North Carolina similarly noted $3.2 billion in unmet needs and enacted new legislation that addresses some of the state's facility shortcomings by providing more than $793 million in new state monies (North Carolina, 1986). Similarly, evidence submitted in Texas suggests that a total of $5.4 billion would be needed to fund facility projects by 1996. Analyses conducted by consultants for various state departments of education have similarly confirmed the importance of deferred and current needs and the relationship of local wealth dependency to unmet needs (Haas, 1988; Thompson, 1988; Burns, 1989). Cumulative research analysis establishes the relationship between wealth and facilities, indicates that equity may be applied to capital outlay, and that rural areas may be distressed where the average age of buildings exceeds 40 years, was built entirely from the sufficiency of a declining local tax base, and needs over $300,000 in repair before considering any educational or technological improvements (Honeyman, 1988). These issues confront schools in rural and urban areas of the various states and are especially troublesome in the nineteen mostly rural states that provide no assistance to capital outlay.

Additionally, there appears to be a growing interest by the courts regarding the ability of school districts to provide adequate facilities. Examples from Tennessee (Small Schools, 1988), New Jersey (Abbott, 1988), Texas (Edgewood, 1986), Missouri (Jenkins, 1986), Alaska (Kenai, 1987) and West Virginia (Pauley, 1979, 1982a,b) address facility issues in these states. For example, in the recent decision rendered by the Administrative Law judge hearing the *Abbott v. Burke* (1988) case in New Jersey, it was noted:

> It is quite obvious on this record that facilities present a statewide problem. Besides the differences in the quality of school facilities between poor urban districts and wealthy districts, our school facilities generally need modernization. . . . Similarly, I do not believe that widely differing physical plants can be justified on an equal protection basis. . . . I *FIND* (Judge's emphasis) that a more systematic way of dealing with replacing and renovating outmoded physical plants should be incorporated into the financing system. (p. 601)

The need for new construction and the renovation of many existing structures is common throughout the nation. School districts are continually faced with difficult questions concerning the ongoing evaluation of the condition of school facilities. Decisions on whether to repair, renovate, or replace a structure can depend upon the growth or decline of student enrollments, the current condition of the structure, and economic realities of the area.

Financing school facilities is primarily a local responsibility (Honeyman, 1989). School district personnel are frequently confronted by patrons who fail to understand increased facility needs that arise during periods of decline. This has resulted in a 50 percent reduction in spending for capital outlay and interest (as a percentage of total school expenditures) during the period 1970 to 1983 (Salmon & Wilkerson, 1984). In addition, as state and federal programs requiring new special education programs, reduced class size, and new instructional programs for technology and computers are implemented, the adequacy of current facilities becomes suspect, and the backlog of needed facilities grows (Honeyman, 1985).

In general, local districts must raise revenue to support school construction. While some states have provisions for assisting local districts, as of 1989 there were nineteen states that had no provisions for capital outlay assistance for school construction. These states are listed in Table 1.

The remaining thirty–one states vary from full state support in Hawaii, Maryland, and Maine, which attempt to fund 100 percent of debt service, to loan fund programs in North Carolina and Virginia, and Vermont, which funds a flat 30 percent of costs for approved projects and 20 percent of long–term debt service. Nine states (including two of the Appalachia Educational Laboratory states)—Alabama, Florida, Indiana, Massachusetts, Mississippi, South Carolina, Tennessee, West Virginia, and Wisconsin fund local district capital outlay reserves on a per–unit basis as part of their state formula. These appropriations range from Alabama, which funds $58.50 per teacher unit, Indiana, which provides $40 per pupil ADA, and Mississippi, which provides $18 per pupil in ADA. Wisconsin shares costs up to $90 per pupil for debt service.

Other states factor a district's ability to pay in the calculation of state support for capital projects. Eight states, Massachusetts, Minnesota, New Jersey, New York, Pennsylvania, Vermont, Washington, and Wisconsin, base their state contribution to capital outlay funds and/or debt service on district wealth calculations within the state formula. For example, New Jersey and Pennsylvania reimburse districts for debt service, on approved projects, according to an ability–to–pay ratio determined by an equalized district wealth factor. New Jersey permits a district to calculate total debt service for a given year plus budgeted capital outlay and funds a state share according to the district's "state support ratio." Pennsylvania determines the "cost capacity" of each building prior to construction. These values are currently set at $2,300 per pupil for elementary school buildings, and $3,000 per pupil

TABLE 1

STATES WITH NO PROVISIONS FOR CAPITAL OUTLAY

Arizona
Colorado
Connecticut
Illinois
Iowa
Kansas
Louisiana
Michigan
Missouri
Montana
Nebraska
Nevada
New Hampshire
North Dakota
Oklahoma
Oregon
South Dakota
Texas
Wyoming

for high schools. The state reimbursement is then based on an adjustment according to the relative wealth—"Market Value Ratio"— of the district.

A vast majority of the states limit the level of debt (debt capacity) against which a local district can borrow. In general, thirty–seven states, including West Virginia, limit debt capacity according to some measure of property valuation. While the base against which these limits are calculated differs from state to state, in general, the limits currently in place range from 2 percent of a district's assessed valuation in Indiana and 2.5 percent of assessed valuation in certain districts of Massachusetts to 29 percent in Montana and 25 percent in the states of Colorado and Louisiana. Two states, Florida and Minnesota, limit debt to a level equivalent to the dollar value that a predetermined number of mills will generate. While Connecticut limits debt to 450 percent of revenue raised in taxes each year, Oregon limits debt according to the number of classes operated by a district times a state adjustment factor times the assessed valuation (Elementary—0.55 x number of classes x assessed valuation, high schools use 0.75.). Alabama uses a thirty–year average revenue projection to cover debt service as the state cap on allowable debt. At present, only Tennessee and Virginia have no debt limit (Hawaii has full state support and California, Illinois, and Alaska do not report any required debt ceiling).

In a majority of the models cited above, rural and small schools are once again disadvantaged by the nature of those programs theoretically designed to assist them repair or replace school buildings. Low pupil counts, the inadequacy of the taxing base, and the limits generally imposed on debt prevent such districts from generating the revenues necessary to build buildings.

The situation that currently exists in Kansas is indicative of the problems faced by many rural and small school districts throughout the United States. In Kansas, there is no state mechanism that supports capital outlay and debt service. School districts are allowed to levy an additional 4 mills for capital projects during a five–year period. While this "4 mill–5 year" levy was developed to assist districts to renovate and replace buildings, property valuations have not kept pace with the cost of construction. In many low–wealth districts 4 mills will not generate enough revenue to perform a building survey and the high cost of bonding prevents many districts from upgrading their facilities. In many situations school districts have had no recourse but to ask the courts to evaluate their needs and mandate change.

Two studies that have recently been reported address school facility issues and other questions with emphasis on the problems of rural schools (Honeyman, 1988b; Honeyman, 1990). One study describes the implications of current methods used by school districts in rural areas of the United States for financing school building problems. This report emphasizes the current "poor" status of school buildings, and the negative effects of deferred maintenance on the condition of school buildings. The second study details the effects of budget and state methods for financing school facility projects on the problems faced by school districts. Each has been summarized and presented below with an emphasis on the conditions reported for the Appalachia Educational Laboratory Region and Southeastern Region.

THE CONDITION OF SCHOOL BUILDINGS IN RURAL AND SMALL SCHOOL DISTRICTS

This study was undertaken to estimate the condition of school facilities in rural and small school districts and analyze the state and local mechanisms used to finance capital outlay funds for school construction (Honeyman, 1988b). The sample was drawn from districts in the fifty states with student enrollments less than 800, existing outside of standard metropolitan statistical areas. Information was collected in two categories: 1) descriptive and financial data from each responding district; and 2) individual building data. Information specific to the methods used by each district in support of capital outlay were collected and a Replacement Cost Index (RCI) for each building calculated.

Evidence exists to suggest that school buildings are deteriorating rapidly and that maintenance needs are increasing concomitantly. The average building reported in the study was built in 1946 at a cost of $745,213. The average amount of deferred maintenance approached $300,000 per building and over one–half of the districts that responded reported that they considered their buildings inadequate for various reasons. The results from this research suggest that nationally the cost of deferred maintenance for rural buildings is approximately $2.6 billion (or an estimated $38 billion for all schools) and the replacement cost for that 50 percent of the buildings that are inadequate, unsafe, inaccessible, or approaching the end of their useful life approaches $18 billion (or an estimated $234 billion for all school districts in the United States). This problem is compounded by the fact that the majority of the rural districts that responded are already exercising approximately 53 percent of their allowable limits for capital outlay and 27 percent of the respondents already exercise 100 percent of their limit.

The RCI computed for the total distribution when compared to the sources of contribution to capital outlay such as bonds, loans, state equalization aid, grants, and local sources indicated a relationship between a school district's ability to generate funds for facilities and the condition of those school buildings. Further screening of the data revealed that school districts with low taxing ability were in fact those districts that exhibited the greatest levels of deferred maintenance. This finding substantiated earlier claims as to the relationship between district wealth and bonding capacity, and the capital outlay funding mechanisms available to district to use in support of facility projects. Those districts with the greatest need generally were least able to pay.

School districts that reported a high level of need almost invariably reported a high dependence on the bond mechanism. It was theorized that a high dependency on bonds and low debt capacity generates a cycle of insufficiency resulting in the use of other funds, usually diverted from general operating funds, in an attempt to finance facility needs. Regardless of the mechanisms that can be used to resolve deferred maintenance and facility needs, local districts and state education agencies must plan to address this growing problem.

Where the average age of buildings exceeds forty years (Mean = 1946) and the buildings cost an average of only $745,213 to build, there is a clear indication that the current dollar estimates for modernization, replacement, and maintenance will continue to increase from an already high level. As most states do not provide equalization aid in large proportions to local districts for facility purposes, the costs of improvements and replacement of obsolete buildings generally fall to the local property tax mechanism. Districts used bonds, transfers from local fund balances, or direct, local, tax authorities to generate funds for capital outlay. Respondents indicated limited assistance from equalized state payments or matching funds.

Regardless of the mechanism used to address needed construction and deferred maintenance needs, a clear awareness should exist at the state level concerning the difficulty presently experienced by school district officials. As a vital part of a state's infrastructure, school buildings must be ranked above highways, roads, and prisons and equitable solutions found to solve this growing concern (Honeyman, 1985).

To further investigate these issues in more detail, states were divided into regions and are reported in Table 2.

Respondents from all regions except the Far West were able to identify districts with no funds expended for capital outlay. All

TABLE 2
STATES IN THE STUDY SEPARATED BY REGIONS

Region	States
New England	ME, NH, VT, MASS, CONN, RI
Mideast	DE, MD, NJ, NY, PA
Southeast	AR, FL, LA, TN, WV, VA, GA, MISS, AL, KY, NC, SC
Great Lakes	IL, IN, MI, OH, WI
Plains	IA, KS, MN, MO, NE, ND, SD
Southwest	AZ, NM, OK, TX, NE
Rocky Mountains	CO, ID, MT, WY
Far West	AL, CA, HI, OR, WA

regions reported districts expending high percentages of total budget on capital outlay, with the Plains and Southeast reporting individual districts channeling up to 30 percent for capital expenditures as a percent of total general fund. (Please note this does not imply that 30 percent was expended from general fund. To date, all states require that capital outlay expenditures for school construction derive from a separate fund, except for lease purchase agreements). This study indicates a high level of activity for capital outlay and a sizable portion of current operating expenditures being directed away from potential educational programs to facility concerns.

The values for the maintenance budget similarly indicated a drain on school district resources for maintaining school facilities. The overall mean for all districts reporting was 5 percent and the mean for each region ranged from approximately 4 percent for the Northeast, Great Lakes, Plains, and Far West, to a high of 10 percent in the Mideast. The Southeast Region reported a 5 percent level, which was slightly below average. In all instances, the means indicated the increasing need among districts to finance maintenance within their current operating budget.

The range in values for debt also indicated a sizable financial burden to school districts. While all regions had districts without debt liability, the regions also had sizable effort, indicating a considerable need to provide both adequacy of funding measures and equitable tax source divisions. The range and clustering of means indicated the least effort in the Rocky Mountain Region with the highest effort exhibited in the Southwest and Southeast. These data indicate several phenomena consistent with other data regarding national population shifts, and the historical age of regions of the nation. Since all regions made considerable effort in support of debt service, the effect of local wealth, state law, variations in ability to pay etc., on levels of debt service are consistent throughout the United States.

The degree to which school districts exercised allowable debt capacities, under state law, indicates a potentially severe problem. The Great Lakes, Plains, Southwest, and Rocky Mountains have districts that exercise debt obligations approaching the maximum permissible limit. Responses from the Plains, Great Lakes, Rocky Mountains, and Southwest indicate either that the need for facilities is so great that debt capacities are nearly absorbed, or that state limits on bond indebtedness capacity are unrealistically low. In either case, a severe problem exists. Other data indicate that these conditions exist in tandem, increasing the complexity of the funding issue and confounding solutions to the problem of sufficient local capacity to fund adequate facilities.

All regions indicated that the principal methods of support for facility projects were bonding, local funding mechanism, or some combination of the two. These two variables were the predominant feature in financing facilities. In most regions including the Southeast, the percentage use of bonding had an inverse relationship to local funds and in all cases except for those states with full state support of capital outlay, districts rely heavily on bonding to fund capital outlay in excess of 50 percent of total dollars needed per project.

The opposite situation was noted for regions with a high level of local funding for capital outlay. As expected, local efforts remain strong, with the Plains and the Far West having the highest local effort. Only the Rocky Mountains Region is reporting lower levels of effort in both variables.

Other mechanisms available to school districts were less prominent, but should be noted. The contribution of direct state participation in the support of capital outlay including equalized payments, and grants as matching funds, or loans, was noted in several regions. Many districts use a variety of methods to fund facility projects.

The methods used by the various states and regions are widely diverse, making generalizations difficult. Nonetheless, reliance on traditional revenue sources of bonding and local taxing authority predominates, with significant but lesser support systems also in existence, such as equalized funds and matching grants. These results support the concept that facilities are primarily a local concern, and only partially a state issue. This is supported by the fact that in the majority of states, the extent to which levels of need for repair and replacement of school buildings can be funded is related to local school district wealth. In practice, it would appear that the methods used by districts to support school facility projects contribute not only to an increasing dependence on local wealth, but also to correspondingly high levels of unmet facility needs when the wealth of the district cannot support facility development.

For rural school districts in this study, five variables addressing the relative age of facilities, original cost, insured values, replacement cost, and a replacement cost index were assessed. These five variables provide a probing insight into age, risk factors, inflation, and construction replacement costs.

The construction dates for schools indicates that facilities are aging as a cohort group and carry the weight of considerable years of utility (See Table 3). Not surprisingly, the Mideast Region shows the newest mean year (1955), followed by Southeast (1952), Rocky Mountains and Great Lakes (1947), Southwest (1946), Plains (1945), and Far West (1941). As expected, the New England Region showed the greatest mean age (1939).

Findings concerning the original cost of buildings (See Table 4) indicated that while considerable investment was made in earlier times, communities have received long and economical service from facilities. The analysis of original cost data showed the highest cost region to be the Mideast ($1.44 million) and the lowest to be the Southwest ($256,238). The remaining regions were distributed as follows: Southeast ($1.4 million), Rocky Mountains ($913,385), Great Lakes ($676,649), New England ($613,852), Plains ($507,048), and Far West ($360,629). These data are consistent with the age of buildings and reflect varying construcion costs dependent on the date of construction and the geographic location. This result is especially important in the Southeast Region.

These results regarding original cost are in sharp contrast to replacement cost and insured value. The values for these variables indicate the effects that the passage of time, inflation, and the increased demands of current educational programs have had on facility costs. The difference between replacement cost and

TABLE 3

AVERAGE DATE OF CONSTRUCTION OF SCHOOL BUILDINGS

Region	Average Date of Construction
New England	1939
Mideast	1955
Southeast	1952
Great Lakes	1947
Plains	1945
Southwest	1946
Rocky Mountains	1947
Far West	1941

TABLE 4
AVERAGE COST OF CONSTRUCTION OF SCHOOL BUILDINGS

Region	Average Cost
New England	$613,852
Mideast	$1,440,000
Southeast	$1,400,000
Great Lakes	$676,649
Plains	$507,048
Southwest	$256,238
Rocky Mountain	$913,385
Far West	$360,269

insured value indicates the risk assumed by communities for unexpected accidents.

The estimated replacement cost for facilities varied from a high of $5.5 million in the Mideast to a low of $1.3 million per building in the Southwest (See Table 5). The mean replacement cost for the remaining regions was reported as follows: Southeast ($3.7 million), Great Lakes ($2.9 million), New England ($2.5 million), Plains and Rocky Mountains ($2.3 million), and Far West ($1.9 million). The values for replacement cost represent large percentage increases. If large–scale replacement or renovation were required, funding such a need would result in a potentially heavy tax burden.

The insured value represents the degree of liability assumed by the local community. For the purposes of this study, risk was described as that percentage of the estimated replacement cost not covered by insurance or state guarantees. The results are reported in Table 6. The percentage of risk was calculated for each region and ranged from a high of 49 percent for the Plains to a low of 11 percent in the Rocky Mountain Region. The remaining regions were as follows: New England (26 percent), Great Lakes (25 percent), Southwest (23 percent), Far West (19 percent), and Mideast and Southeast (18 percent). If these values

TABLE 5
ESTIMATED REPLACEMENT COST OF SCHOOL BUILDINGS

Region	Replacement Cost
New England	$2.5 million
Mideast	$5.5 million
Southeast	$3.7 million
Great Lakes	$2.9 million
Plains	$2.3 million
Southwest	$1.3 million
Rocky Mountains	$2.3 million
Far West	$1.9 million

TABLE 6
Average Percentage of Uninsured School Buildings (Based on Replacement Cost Estimates)

Region	Percentage
New England	26
Mideast	18
Southeast	18
Great Lakes	25
Plains	49
Southwest	23
Rocky Mountains	11
Far West	19

held true for every school district they would represent a moderate to high degree of vulnerability to disaster in the event of total building loss. Additionally, a question must be addressed concerning the practice of underinsuring. Continued underevaluation would exacerbate the actual difference between insured face value and replacement cost, and districts could risk further financial hardship through failing to meet their respective co–insurance provisions.

Three questions assessed the condition of each building: does the building have sufficient space for current and future enrollments; is the building safe by OSHA requirements; and is it accessible to the handicapped. Mean values for adequacy were sizable but indicated either past effort by districts to provide space or possibly declining enrollments. Three means were highest, i.e., districts reporting that a building was inadequate for enrollment in the Far West, New England, and Mideast. The lowest value was found in the Rocky Mountains Region. These trends are not surprising given population shifts and other economic and demographic factors that have been experienced by the Far West and currently are occurring in the East.

Mean values for handicapped accessibility were higher, indicating a greater need for funds. Such needs occur despite mandates and limited federal aid, as many buildings do not presently meet standards for full compliance. Overall, the values indicated an extensive need, often in direct correlation to the age of the building.

Mean values for safety were lower, indicating an overall low level of need, yet some districts had high levels of deficiency. These safety issues were generally associated with asbestos removal and other environmental factors. Nowhere was there an indication of concern for structural safety.

In some instances, the mean value of additions and improvements exceed one–third of the replacement cost of the building. Such data indicated that many buildings had been enhanced over the years, which could contribute to the overall condition of the building. Mean values in descending order indicate considerable activity in all regions for additions and are summarized as follows: Mideast ($2.1 million), Southeast ($1.7 million), Rocky Mountains ($1.1 million), Great Lakes ($870,000), New England ($836,000), Plains ($759,000), Far West ($678,000), and Southwest ($391,000).

The final variable examined explored the RCI. In using the RCI, Honeyman (1988a, 1988b, 1989) and Burns (1989) have demonstrated that as the indexed value decreased, the condition of the building worsened, and the liability to the district for future repair and/or replacement increased. Thus, a low index value would indicate both need and potential cost. The potential range of values spans from zero to greater than one. A value greater than one would represent a building that has had more money spent on its improvement and major repair than it would cost to replace.

Computed mean values by region are reported in Table 7 and show midrange to low ratios, consistent with findings for age, and condition of buildings described above. Values in descending order, which indicate an increasing level of need, are given as follows: Southeast (.51), Southwest and Rocky Mountains (.42), Great Lakes and Plains (.40), Mideast and Far West (.39), and New England (.33). Care should be exercised in interpreting the high value for the Southeast Region. Florida has reported extensive building activity as a result of unprecedented growth in the state. Further study needs to be conducted to evaluate whether these ratios will remain high in the AEL states as well.

The consistency of the results of this analysis demonstrate the magnitude of the problem—many school buildings in rural school

TABLE 7

AVERAGE REPLACEMENT COST INDEX FOR SCHOOL BUILDINGS

Region	Cost Index
New England	0.33
Mideast	0.39
Southeast	0.51
Great Lakes	0.40
Plains	0.40
Southwest	0.51
Rocky Mountains	0.42
Far West	0.39

districts across the country need repair or replacement. Additionally, the data supports the concept of widespread and serious inability of rural and small communities to generate the funds to support school construction. Although the inability to generate necessary support for school construction is related to multiple and complex causes, the results of this study indicate the need for states to examine captial outlay and school facility equity issues. In fact, Texas and South Carolina have recently begun such studies. The data consistently identifies: (1) considerable need as demonstrated by all variables examined, (2) a sizable degree of risk that many school districts currently take concerning the long-term maintenance and replacement of their facilities, (3) the increasing difficulty for the future as districts encounter an accelerating need to renovate and replace facilities, and (4) the mechanisms used by the various states to finance capital outlay projects have contributed to the difficulties currently being experienced by many rural and small schools by forcing district reliance on local revenues. Several of these mechanisms have been investigated and are reported in the next section.

FINANCING CAPITAL OUTLAY

States use a variety of formulas to distribute funds to local school districts. It is important to note that these formulas in whatever form have been developed and altered by the political process over the years and focus on general fund expenditures, which include line items such as salaries, utility costs, instructional costs, etc. While many states have added provisions for sparsity and low population density to their state formulas, such provision generally supports only general fund expenditures.

In addition to the questions that can be raised as result of the diminished general fund adjustments that can result from inadequate funding levels as part of the state formula, rural and small schools face one insurmountable problem: the repair and replacement of school buildings.

The funding for major repair, renovation, and replacement of school facilities is covered in provisions for capital outlay and debt service/interest found in legislative enactments in most states. Many districts are finding it necessary to build facilities financed through lease/purchase agreements. Such agreements are usually paid out of current operations with the assistance of the Revenue Bond mechanism, not General Obligation Bonds. However, it is generally accepted that the lease/purchase option is viable in larger population centers and relatively wealthy communities. In order to determine the total picture of the relationship between debt/interest, capital outlay and the various state provisions for school construction, further investigation on a state–by–state basis is needed.

In order to address these questions, aggregate data were collected in 1989–90 from all fifty states in the following categories: enrollment, capital outlay, and interest (Honeyman, 1990). Additional yes or no responses were collected for the following questions:

1. Is state permission required for school construction?
2. Can a district build a school building without local permission?
3. Can a district raise local funds for school construction?
4. Are lease/purchases allowed?
5. Can debt be paid from the general fund?
6. Can interest be transferred to the general fund?
7. Can transfers be made from the general to the capital outlay fund?
8. Does the state provide direct assistance for school construction (1989–90)?

The responses to requests for information on enrollment, capital outlay, and interest are reported in Table 8. Values for capital outlay per pupil and interest per pupil were calculated.

The values reported for the Appalachian states indicate that these states spend less per pupil on capital outlay and interest than the national average. Overall these states spent an average of $206.55 per pupil (42 percent less) on capital outlay and $75.69 per pupil (19 percent less) in interest. Since the Southeast Region reported newer buildings (1951) and a high replacement cost per building (1.4 million), such a situation could be explained if school construction in this region is lower than the nation as a whole.

The responses to the survey requesting information on the eight questions listed above are reported in Table 9.

One question that the research addressed was whether the presence or absence of state assistance would have an effect on the relationship that existed between capital outlay per pupil and interest per pupil. In order to test for this condition, a series of simple regression tests were performed to indicate potential changes in the relationship between capital outlay and interest for all states, states with assistance and those with no state assistance. The results of these analyses and appropriate graphs are presented in the Tables 10 to 12.

For all states analyzed together there was a positive and significant relationship between capital outlay and interest (R2=0.13

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TABLE 8
ENROLLMENT, CAPITAL OUTLAY, AND INTEREST PAYMENTS BY STATE 1989/90

State	Enrollment	Cap. Outlay (X1000)	Interest (X1000)	CapOut/Std	Int/Stud
Alabama	728254	$253,284	$29,048	$347.80	$39.89
Alaska	103373	$49,482	$61,025	$478.67	$590.34
Arizona	679310	$691,882	$143,989	$1,018.51	$211.96
Arkansas	434960	$113,858	$32,717	$261.77	$75.22
California	4728293	$1,041,666	$34,932	$220.30	$7.39
Colorado	566631	$118,102	$91,226	$208.43	$161.00
Connecticut	465646	$141,500	$38,500	$303.88	$82.68
Delaware	97808	$18,000	$5,000	$184.03	$51.12
Florida	1794936	$1,518,200	$162,574	$845.82	$90.57
Georgia	1126535	$364,759	$40,932	$323.79	$36.33
Hawaii	169193	$49,400	$300	$291.97	$1.77
Idaho	216909	$51,065	$9,608	$235.42	$44.30
Illinois	1779428	$500,000	$178,500	$280.99	$100.31
Indiana	955611	$400,255	$85,581	$418.85	$89.56
Iowa	478486	$120,847	$17,505	$252.56	$36.58
Kansas	430864	$144,385	$28,907	$335.11	$67.09
Kentucky	630688	$117,700	$43,000	$186.62	$68.18
Louisiana	775300	$167,740	$86,160	$216.35	$111.13
Maine	208343	$81,000	$19,564	$388.78	$93.90
Maryland	698806	$330,171	$32,998	$472.48	$47.22
Massachusetts	809824	$205,683	$56,306	$253.98	$69.53
Michigan	1566030	$491,000	$188,000	$313.53	$120.05
Minnesota	737997	$344,800	$73,550	$467.21	$99.66
Mississippi	502200	$115,000	$25,000	$228.99	$49.78
Missouri	807934	$318,000	$57,000	$393.60	$70.55
Montana	150539	$28,000	$9,000	$186.00	$59.79
N. Carolina	1078153	$355,405	$0	$329.64	$0.00
Nebraska	269861	$41,844	$20,169	$155.06	$74.74
Nevada	186800	$163,900	$29,763	$877.41	$159.33
New Hampshire	171532	$98,819	$17,483	$576.10	$101.92
New Jersey	1076005	$85,900	$100,000	$79.83	$92.94
New Mexico	279219	$203,132	$50,674	$727.50	$181.48
New York	2572500	$789,755	$231,644	$307.00	$90.05
North Dakota	117134	$34,101	$4,284	$291.13	$36.57
Ohio	1764200	$466,500	$86,000	$264.43	$48.75
Oklahoma	577000	$260,000	$28,000	$450.61	$48.53
Oregon	472400	$210,300	$40,800	$445.17	$86.37
Pennsylvania	1654480	$305,782	$199,432	$184.82	$120.54
Rhode Island	135035	$8,032	$5,792	$59.48	$42.89
S. Carolina	616805	$161,800	$72,000	$262.32	$116.73
South Dakota	127100	$32,700	$2,000	$257.28	$15.74
Tennessee	828688	$63,000	$72,000	$76.02	$86.88
Texas	3327498	$1,420,047	$482,455	$426.76	$144.99
Utah	435762	$90,041	$34,962	$206.63	$80.23
Vermont	94779	$20,535	$9,595	$216.66	$101.24
Virginia	985031	$426,747	$92,309	$433.23	$93.71
Washington	810574	$890,883	$124,480	$1,099.08	$153.57
West Virginia	328069	$42,763	$17,707	$130.35	$53.97
Wisconsin	782915	$217,700	$64,800	$278.06	$82.77
Wyoming	97172	$30,000	$14,000	$308.73	$144.07

TABLE 9

RESPONSES TO YES/NO QUESTIONS 1 = YES

State	State. Permi	Local. Approv.	Local $	Lease Purch.	Debt to General	Trans to General	Trans to Capital	State Support
Alabama	1	1	1	0	0	0	0	1
Alaska	1	1	0	0	0	0	0	1
Arizona	0	0	0	0	1	0	0	0
Arkansas	1	1	1	0	1	1	1	1
California	1	0	1	1	0	0	0	1
Colorado	0	1	0	1	1	0	1	0
Connecticut	1	0	0	0	1	1	0	0
Delaware	1	0	0	0	0	0	0	1
Florida	1	1	1	1	0	0	0	1
Georgia	1	1	1	1	1	0	1	1
Hawaii	1	1	0	0	0	0	0	1
Idaho	1	1	1	1	0	0	1	1
Illinois	1	0	0	0	0	1	1	0
Indiana	1	1	1	1	1	1	1	1
Iowa	1	0	0	1	0	1	0	0
Kansas	1	1	1	0	1	1	1	0
Kentucky	1	1	1	0	1	0	1	1
Louisiana	0	1	1	0	0	0	0	0
Maine	1	0	1	1	1	1	0	1
Maryland	1	1	0	1	1	0	0	1
Massachusetts	1	1	0	1	0	1	0	1
Michigan	1	0	0	0	1	0	0	0
Minnesota	1	1	0	1	0	0	0	1
Mississippi	1	1	0	1	0	0	1	1
Missouri	1	1	1	1	1	0	1	0
Montana	0	1	1	0	0	1	0	0
N. Carolina	1	0	0	0	0	1	0	1
Nebraska	0	1	1	1	0	0	1	0
Nevada	1	0	1	0	0	1	0	0
New Hampshire	1	0	0	1	1	1	0	0
New Jersey	0	0	0	1	1	0	0	1
New Mexico	1	1	1	0	0	0	1	1
New York	1	1	0	0	1	0	1	1
North Dakota	1	1	1	1	0	1	1	0
Ohio	1	1	0	0	0	0	0	1
Oklahoma	0	0	1	1	1	1	0	0
Oregon	0	1	1	1	1	1	1	0
Pennsylvania	1	1	1	1	1	0	0	1
Rhode Island	1	1	0	0	0	0	0	1
S. Carolina	0	0	1	1	1	0	0	1
South Dakota	1	1	1	1	0	1	0	0
Tennessee	1	1	0	1	1	0	0	1
Texas	0	0	0	0	0	0	0	0
Utah	1	1	1	1	0	0	0	1
Vermont	1	0	1	1	1	1	1	1
Virginia	0	1	1	0	0	0	0	1
Washington	0	1	0	1	0	0	0	1
West Virginia	1	0	1	0	0	0	0	1
Wisconsin	0	0	1	1	1	0	1	1
Wyoming	0	0	1	0	0	1	0	0
PERCENT YES	72%	62%	56%	54%	44%	36%	34%	62%
PERCENT NO	28%	38%	44%	46%	56%	64%	66%	38%

TABLE 10

DESCRIPTIVE STATISTICS AND REGRESSION RESULTS FOR ALL STATES COMPARING PER PUPIL EXPENDITURES FOR CAPITAL OUTLAY AND INTEREST

Simple Regression X_1 : $CAPOUT/STD Y_1 : $INT/STD

Count:	R:	R-squared:	Adj. R-squared:	RMS Residual:
50	.36	.13	.11	80.16

Analysis of Variance Table

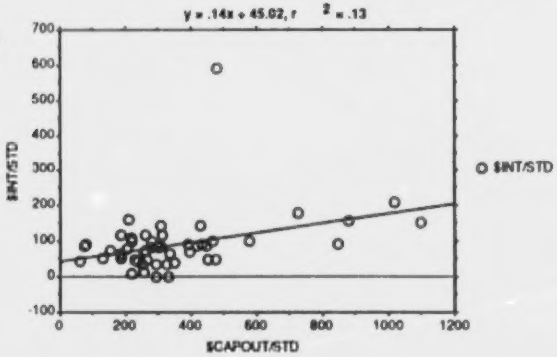
Source	DF:	Sum Squares:	Mean Square:	F-test:
REGRESSION	1	44835.82	44835.82	6.98
RESIDUAL	48	308424.36	6425.51	p = .0111

X_1 : CAPOUT/STD

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
.35	.22	.03	.05	63.47	50
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing:**
.06	1.1	1.04	17.56	8.6	0

X_2 : INTEREST/STD

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
.09	.08	.01	.01	91.62	50
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing:**
0	.59	.59	4.63	.78	0



and p=.011) (See Table 10). As expected, these results would indicate that interest was connected to capital outlay such that an increase in capital spending would result in an increase in interest payments as well.

However, when the analysis was conducted for states with assistance programs and those without state support for school construction, the results were different. States with no assistance reported a significant, (p = 0.0056) and stronger relationship between capital outlay and interest with an explained variance (R2) of 0.35 (See Table 11). As such, 35 percent of the variance (vari-

3 . 0

TABLE 11

DESCRIPTIVE STATISTICS AND REGRESSION RESULTS FOR ALL STATES WITH NO STATE SUPPORT COMPARING PER PUPIL EXPENDITURES – CAPITAL OUTLAY AND INTEREST

Simple Regression X_1 : $CAPOUT/STD Y_1 : $INT/STD

Count:	R:	R-squared:	Adj. R-squared:	RMS Residual:
20	.59	.35	.32	40.95

Analysis of Variance Table

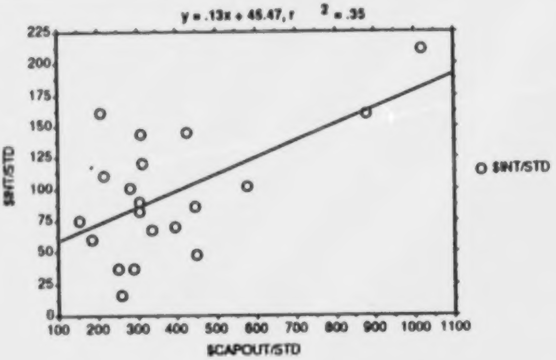
Source	DF:	Sum Squares:	Mean Square:	F-test:
REGRESSION	1	16381.94	16381.94	9.77
RESIDUAL	18	30183.08	1676.84	p = .0058
TOTAL	19	46565.02		

X_1 : $CAPOUT/STD

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
380.21	220.2	49.24	48487.14	57.91	20
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing**
155.06	1018.51	863.45	7604.19	3812442.62	0

X_2 : $INT/STD

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
96.17	49.51	11.07	2450.79	51.48	20
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing**
15.74	211.96	196.23	1923.45	231548.33	0



ability) in the amount of interest paid was accounted for by the level of capital outlay in states that did not report that support for school construction existed.

For states that reported that mechanisms were in place to assist local school districts with school construction needs, no significant relationship between capital outlay and interest was determined (See Table 12). With 9 percent of the variance explained by the level of capital outlay expenditure and a non–significant alpha

TABLE 12

DESCRIPTIVE STATISTICS AND REGRESSION RESULTS FOR ALL STATES WITH STATE SUPPORT COMPARING PER PUPIL EXPENDITURES FOR CAPITAL OUTLAY AND INTEREST

Simple Regression X_1 : \$CAPOUT/STD Y_1 : \$INT/STD

Count:	R:	R-squared:	Adj. R-squared:	RMS Residual:
30	.3	.09	.06	99.68

Analysis of Variance Table

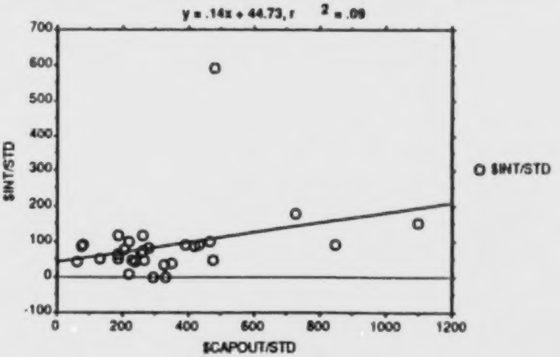
Source	DF:	Sum Squares:	Mean Square:	F-test:
REGRESSION	1	28063.3	28063.3	2.82
RESIDUAL	28	278224.88	9936.6	p = .104
TOTAL	29	306288.18		

X_1 : \$CAPOUT/STD

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
331.82	226.28	41.31	51200.97	68.19	30
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing:**
59.48	1099.08	1039.6	9954.56	4787935.51	0

X_2 : \$INT/STD

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
90.35	102.77	18.76	10561.66	113.75	30
Minimum:	**Maximum:**	**Range:**	**Sum:**	**Sum of Sqr.:**	**# Missing:**
0	590.34	590.34	2710.47	551175.64	0



level (p = 0.104), it appears that there is only the weakest relationship between the two variables in states that do support school construction.

Given the results obtained during this analysis the following conclusions were drawn:

1. The slope of the graph for no state aid states was slightly lower (0.13 compared to 0.14) with a higher intercept (45.47 compared to 44.73);

2. In no–state–aid states more variance in interest was explained by capital outlay (35 percent compared to 9 percent).

As a result there is an indication that districts in no–state–aid states pay more in interest and have greater variability in the rates they pay according the amounts they pay in capital outlay per pupil. This may also relate to the amounts they borrow in support of school construction.

An attempt was made to describe the best combination of variables that would predict higher expenditures on capital outlay. Step–wise regression equations were developed to test the relationships for states with state aid for school construction and states that had no support. The results of these analyses are reported in Table 13.

As a result of these analyses the following observations were made. For the variables being investigated the following combinations indicate relationships with the level of expenditure for capital outlay per student.

In states with state support mechanisms, although the statistical combination explains only 23 percent of the variability in capital outlay per pupil expenditures, the best combination of factors included:

1. Require local approval for school construction;
2. Do not require state approval for school construction; and,
3. Do not allow districts to pay debt from general fund.

In states that do not support school construction with state funds, the factors selected explain more of the variability in ex-

TABLE 13

PREDICTING CAPITAL OUTLAY PER STUDENT FOR STATES WITH STATE SUPPORT AND STATES WITHOUT STATE SUPPORT STEPWISE REGRESSION

Rank Entering	Variable Name	R	R2	Correlation	F–Value
States with state support					
1	Local Approval	.29	.09	.29	2.63
2	State Permission	.42	.17	–.20	2.85
3	Debt to General	.48	.23	–.25	2.61
	Other variables not entered				
States with no state support					
1	Local Approval	.47	.22	–.47	5.08
2	Debt to General	.53	.29	.26	3.34
3	Raise $ Locally	.58	.34	–.12	2.75
	Other variables not entered				

penditures for capital outlay per pupil (34 percent). The best combination of factors included:

1. Do not require local approval for school construction;
2. Allow debt to be paid from the general fund; and,
3. Do not allow/require districts to raise funds locally (other than debt) for school construction.

CONCLUDING STATEMENTS

Deferred maintenance and school construction needs are a serious concern throughout the United States. The problems associated with the financing of facilities by school districts place many school districts in potential distress. The problem is crucial to the long–term success of many rural and poor school districts that lack an adequate tax base to support the levels of debt needed to resolve the problem. Regardless of the mechanisms that can be used to resolve deferred maintenance and facility needs, local districts and state education agencies must plan to address this growing problem.

The results that have been reported in this paper indicate that the states of the Southeast Region have problems similar to other regions, including aging facilities, high levels of deferred maintenance, high construction costs, and inadequate tax bases to raise funds for school construction. It is important to note that the aggregate data used in this study do not indicate the situation existing in each state. Personal communication and reports from Tennessee, Kentucky, and West Virginia indicate that the situation in these states may be worse than reported here. It appears that in these states there is an overwhelming inability of local districts to fund capital outlay at levels needed to keep their buildings adequate, safe, and accessible to special populations of students. Evidence exists to suggest that school buildings are deteriorating rapidly and that maintenance needs are increasing concomitantly.

For many rural schools throughout the United States, the data consistently identifies: (1) considerable need as demonstrated by all variables examined, (2) a sizable degree of risk that many school districts currently take concerning the long–term maintenance and replacement of their facilities, (3) the increasing difficulty for the future as districts encounter an accelerating need to renovate and replace facilities, and (4) the mechanisms used by the various states to finance capital outlay projects have contributed to the difficulties currently being experienced by many rural and small schools by forcing district reliance on local revenues.

Based on the findings reported in this paper the following observations can be made:

1. Short of full state funding for school construction, it appears that there is no single, equitable solution to the growing school facility problem in this country;
2. Part of the problem with school facilities can be attributed to the manner in which school districts are allowed/required to budget and fund capital outlay and the extent to which approval must be made by local taxpayers;
3. In the long term, it is doubtful whether enough money exists at the state and local level to solve the current (and future) situation. Federal assistance may be necessary; and,
4. Given the diversity and variability of the factors investigated in this report from across the nation, each state must evaluate the relationship between the condition of school facilities and the manner in which school construction is financed.

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Some Reflections on Fiscal Policies for Rural Schools

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INTRODUCTION

ONE of the roles I was asked to play in conjunction with AEL's conference on "Fiscal Policies for Rural Schools: The Dollar Dilemma" was to offer some reflections on the significance of the content–rich collection of nine papers on various dimensions of the rural school finance issue that might be of value for members of the policy, research, and school improvement communities, and for the general public. Importantly, no preconditions were established by AEL concerning what approach, or combination of approaches, I might select from what clearly are a large number of meaningful ways to think about the collection. I could, for example, have selected to synthesize the major findings, conclusions, and/or observations presented in the nine papers, looking especially for the flow of common ideas and then contemplate about the meaning of these. Or, an attempt could have been made to ponder about the potentially rich research agenda that is suggested by the collection that if pursued could better inform public policy for rural schools.

Reflections of these two types and other useful ways to think about the collection are important and must be done, but not by me here. Rather, what follows represent several of the most important immediate thoughts I have about the collection, and how it came to be, that strike me as important to share. These retrospections have been organized around five themes:

- the issue of attempting to ensure fiscal equity for rural schools, though complex, is not insurmountable;
- moreover, important as this collection is, there are other considerations that should also be at least initially identified here that bear on the issue of fiscal equity for rural schools, in addition to the clear focus of the papers on the role of the states;
- important as achieving fiscal equity is, there is more to the multi–faceted construct equity than its fiscal dimension;

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SEVERELY DISABLED CHILDREN: WHO PAYS?

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Severely Disabled Children: Who Pays?[1]

In 1989 the Supreme Court declined to review a significant decision in which the First Circuit Court of Appeals interpreted the Education for All Handicapped Children Act (EHA) of 1975 as requiring school districts to provide educational services for _every_ handicapped child regardless of the severity of the child's disabilities.[2] The appellate ruling in _Timothy W. v. Rochester, New Hampshire, School District_ applies as precedent only in Maine, Massachusetts, New Hampshire, Rhode Island, and Puerto Rico. Nonetheless, this decision has received national attention and has sparked lively debate regarding what constitutes "education" and whether public schools currently are being required to support some services that are beyond their competence and fiscal capacity. This paper provides an overview of legal developments pertaining to severely disabled children, an analysis of the _Timothy W._ case, and a brief discussion of its implications.

Background

The past decade has witnessed a steady stream of litigation involving the rights of handicapped children. Although school litigation in general leveled off in the 1980s, cases involving handicapped students increased dramatically, representing over 40% of the decade's cases involving students' rights and 30% of _all_ school litigation in 1988.[3] A large portion of these cases has dealt with the severely disabled, despite the fact that a very small percentage of the school age population (about 3,000 children nationwide) is considered severely disabled.[4]

Almost all of these cases have been initiated under the EHA, which is a federal funding law stipulating that all handicapped children must be identified and provided a free appropriate education as a prerequisite to states' participating in the federal assistance program.[5] Currently all states receive EHA funds. Congress authorized the federal share of excess costs for special education services (expenses incurred beyond the amount spent on nonhandicapped students) gradually to increase to a cap of 40% by fiscal year 1981. However, congressional appropriations have been far below this level, not yet exceeding 12% of such excess costs. Thus, state and local education agencies have shouldered the major burden of providing appropriate services for handicapped children.

Under the EHA, handicapped children are entitled to special education and related services (e.g., transportation, physical therapy) necessary for them to benefit from special education. Central components of the EHA are the requirements that individualized education programs (IEPs) be designed for all handicapped children and that such children be educated in the least restrictive environment (i.e., with nonhandicapped children where possible). The EHA also guarantees parents extensive procedural rights in the evaluation and placement of their handicapped children, and such children are entitled to private placements if appropriate public programs are not available.

Prior to the Timothy W. decision, most legal controversies brought under the EHA focused on the types of educational programs and related services that must be supported by school districts, rather than on whether specific handicapped children were entitled to educational services. In the initial wave of EHA litigation, courts were unsympathetic when school districts claimed "lack of funds" as the rationale for denying appropriate programs for specific handicapped children.[6] For example, in 1979 a California federal district court noted that severely handicapped students "could place a significant burden on the resources of our public school systems, but Congress has determined that it is worth the price to develop the potential of the handicapped."[7] Severely handicapped children have often been placed in year-round residential facilities, and most courts have held the home school districts responsible for the costs of residential placements, even though made for both custodial and educational reasons.[8] While courts have acknowledged that school districts can enter into agreements with other state agencies to share the costs of providing services for handicapped children,[9] such cost-sharing has not often occurred.

In an illustrative case, the Third Circuit Court of Appeals in 1981 held that a Delaware school district was obligated to support a residential placement, including noneducational costs, for a severely handicapped child.[10] The court noted that the child's combination of physical and mental handicaps necessitated a high level of consistency in programming that warranted a residential placement. Recognizing that the EHA specifically assigned responsibility for handicapped children to the schools, the appellate court concluded that the school district was fiscally obligated to support services to address the child's social and emotional as well as educational needs.

In most cases courts have applied an expanded definition of "education" in that self-sufficiency and even some degree of self-care (e.g., toilet training and dressing and feeding oneself) have been considered appropriate educational goals.[11] Accordingly, the responsibility for programs to attain these goals has been placed on the public schools. In 1983, for example, the First Circuit Court of Appeals ruled that a severely retarded child who needed round-the-clock training and reinforcement to make any educational progress was entitled to a residential program under the EHA.[12] Rejecting the school district's contention that the child's residential needs were custodial rather than educational, the court adopted a broad definition of education and declared that minimum educational benefits could not be obtained in a day program.

The following year the Sixth Circuit Court of Appeals held that a seriously emotionally disturbed teenager was entitled to placement in a long-term residential treatment facility, noting that cost considerations are relevant only when choosing between several options, all of which are considered appropriate to meet the child's needs.[13] Subsequently, the Seventh Circuit Court of Appeals struck down an Illinois law requiring parents to pay up to $100 a month of their handicapped child's living expenses in private facilities where the placement was based on the child's developmental disabilities rather than educational needs.[14] The court rejected the contention that if the child would have to live in an institution anyway (regardless of any efforts to educate the child), those living expenses are not caused by his educational needs and should not be assessed against the education agency.

More recently, the Supreme Court declined to review a decision in which the Eleventh Circuit Court of Appeals held that a Georgia school district must support a residential program for an autistic child until age 21 if the child continues to need constant educational supervision in order to progress.[15] The court further ordered the school district to reimburse the child's parents over $42,000 for expenses they had incurred in supporting residential placements in Tokyo and Boston. Although troubled by the fact that the parents had selected residential centers so far away from their home, the court concluded from the evidence (including itemized statements of the costs incurred in the private programs) that reimbursement was justified because the school district had failed to propose an appropriate placement for the child.[16]

Some courts, however, have recognized limitations on the school district's responsibilities under the EHA. For example, the Fourth Circuit Court of Appeals rejected a parental request for continuation of a handicapped child's 24-hour residential care, concluding that the school district's proposed day program for the profoundly retarded child constituted an appropriate program under the EHA.[17] Similarly, the Tenth Circuit Court of Appeals recognized that the EHA does not entitle handicapped children to residential placements that will maximize their potential and thus held that a school district's proposed program of one-on-one instruction and counseling for a multiply handicapped child was appropriate, even though a private placement might be superior.[18] Other courts have noted that if two programs are considered suitable for a handicapped child, it would seem reasonable to select the less expensive program because excessive spending on one handicapped child can deprive other handicapped children.[19]

In 1985, when the Seventh Circuit Court of Appeals invalidated the Illinois law requiring parents to contribute to their developmentally handicapped children's living expenses in private facilities, the court commented that the most severely handicapped children may be beyond the public school's responsibility. The court declared that "if the child is so far handicapped as to be unconscious, and is thus wholly uneducable, he falls outside the protection of the [EHA] even though his handicap is more rather than less severe than that of children protected by the Act."[20] The court further recognized that "it can be argued that the limited funds allocated for the education of the handicapped could be employed more productively on a child likely to make real educational progress. . . than on one too severely retarded to benefit much at all."[21] While the appeals court at least hinted that public schools may not be required to serve some profoundly handicapped children, this contention was not addressed directly until the federal district court rendered its opinion in Timothy W. v. Rochester, New Hampshire, School District.

The Litigative History of the Timothy W. Case

The controversy in Timothy W. focused on the school district's obligation to provide services for a child who suffered from severe spasticity, brain damage, joint contractures, seizure disorder, and other profound disabilities. He made virtually no sounds and was non-ambulatory, quadriplegic, and cortically blind. The hearing officer had ruled that the child qualified for special education, noting that all handicapped children are entitled to an IEP, regardless of the severity of their handicaps. He reasoned that "inquiry as to whether a child might benefit from special education is no longer relevant."[22]

The New Hampshire federal district court judge, however, disagreed. The judge concluded that if a child is incapable of cognitive learning, he or she is not entitled to an IEP under the EHA. The court relied in part on the 1982 decision, Board of Education of the Hendrick Hudson Central School District v. Rowley, in which the Supreme Court reasoned that handicapped children were not entitled to programs that would maximize their potential, but rather to a floor of basic opportunity consisting of personalized instruction and support services "designed to provide educational benefit."[23] The New Hampshire judge interpreted the Supreme Court's emphasis on "educational benefit" as meaning that students incapable of benefiting from instruction are not entitled to IEPs. The judge declared: "It logically follows that a handicapped child who . . . does not have learning capacity was not intended to receive special education under the [EHA]. Surely, Congress would not legislate futility!"[24]

The judge found support for this reasoning in the decision discussed previously in which the Seventh Circuit Court of Appeals indicated that children incapable of learning (e.g., comotose) would not be entitled to IEPs under the EHA.[25] The judge concluded that both the EHA and New Hampshire law require this threshold determination regarding whether a specific child can benefit from special education.

To make this determination, the judge relied on expert testimony regarding Timothy's capabilities. During the trial, divergent perspectives were presented by various medical and teaching personnel as to Timothy's ability to benefit from education. Some testimony indicated that Timothy was operating at the brainstem level and would never be able to care for himself or acquire academic skills. Other experts, however, indicated that Timothy could benefit from an IEP carefully tailored toward very limited goals involving basic self-survival.

After reviewing the extensive testimony, the judge reached the "regrettable conclusion" that Timothy's potential for learning seemed "non-existent."[26] Noting that Timothy's activities were passive (with little, if any, purposeful movement), the judge reasoned that the greatest service that society can provide for Timothy is to alleviate his pain and suffering "and provide him a comfortable and secure living environment."[27] The judge agreed with the school district that the EHA pertains to handicapped children who "require" special education and can benefit from such educational services. Concluding that the school district was not obligated to provide special education services for Timothy, the district's motion for summary judgment was granted. The judge did note, however, that Timothy must be evaluated regularly for developmental signs indicating a capability to benefit from special education.

Reversing the lower court's decision, the appeals court relied on the wording of the EHA that entitles all handicapped children to educational services. The court concluded that "the language of the Act could not be more unequivocal," in that the provision of services for severely disabled children who have not been served adequately is a specified priority of the EHA.[28] In essence, a "zero-reject policy" is at the Act's core. The court declared that "ability to benefit" is not a prerequisite to the provision of education services.

The appeals court reviewed the legislative history of the EHA and related case law in reaching its conclusion that education for the severely handicapped under the Act is to be broadly defined: "The district court's conclusion that education must be measured by the acquirement of traditional 'cognitive skills' has no basis whatsoever in the 14 years of case law since the passage of the Act."[29] The appellate court observed that other federal courts consistently have held that education under the Act encompasses a wide spectrum of training, including the most basic life skills for some children.

Finding the district court's reliance on Rowley misplaced, the appeals court noted that Rowley dealt with the level of services the school district was obligated to support for a child with a hearing disability and not with whether specific handicapped children were entitled to any services. The appeals court declared that "nowhere" in Rowley does the Supreme Court suggest that the basic floor of educational opportunity that must be provided for the handicapped "contains a trap door for the severely handicapped."[30] The only question the school district must consider is what constitutes an appropriate individualized education program for Timothy, and the appeals court emphasized that this cannot be interpreted as "no educational program."[31]

In the school district's petition for the appellate court to rehear the case, the district faulted the court for not applying the EHA's definition of handicapped children (i.e., those who "require" special education).[32] Contending that the appellate court erred by holding that Timothy's program may consist solely or primarily of related services, the district asserted that the EHA deals with education and "is not a national health insurance statute."[33] The school district further questioned how there can be an objective legal standard for determining the level of services that the school district must provide in instances where a child is incapable of benefiting from special education: "While the Court of Appeals asserts that Rowley was not intended to be a 'trap door', its opinion turns Rowley into an elevator with no top floor."[34]

Implications

Advocacy groups on behalf of the handicapped, including the Association for Retarded Children, the Disability Rights Education and Defense Fund, and the Council for Exceptional Children, cheered the Timothy W. ruling as reaffirming the "zero-reject" philosophy in that school districts cannot deny services because of the severity of a child's disabilities. Frank Laski, who filed a friend-of-the-court brief on behalf of the Association for Persons with Severe Handicaps, asserted: "If anybody thought there was any basis for excluding any kid, this puts an end to it."[35] The Justice Department also had urged the appellate court to reverse the lower court's decision, arguing that it is not the role of federal courts to set a threshold under the EHA that excludes certain severely handicapped children.[36]

However, the American Association of School Administrators and the National School Boards Association (NSBA) have contended that the appellate court's ruling sweeps too broadly in placing unrealistic fiscal obligations on already strained education budgets. August Steinhilber, general counsel for the NSBA, has claimed that small school districts simply do not have $100,000 a year to spend on custodial care for a single child.[37] Gerald Zelin, attorney for the Rochester School District, has agreed with Steinhilber that under Timothy W. school districts could be held responsible for children in comas.[38] Zelin has asserted that "the ruling could expose school districts around the country to tremendous costs for programs that would have minimal impact."[39] Moreover, Raymond Yeagley, Superintendent of the Rochester School District, has indicated that the district must realign educational priorities as a result of the Timothy W. decision. He also has voiced concern that other students will suffer because of the appellate court's failure to place any financial limits on the school district's obligations to serve the severely disabled.[40]

The issue of program costs seems to be appearing more often in special education cases than it did in the late 1970s and early 1980s. Given the federal government's failure to appropriate the promised level of funds under the EHA, state and local education agencies are questioning the justification for placing additional stress on education budgets to support residential placements--primarily custodial in nature-- for severely handicapped children. At what point is the educational aspect of a severely handicapped child's placement so minimal that the school district should not bear total responsibility? Is it an appropriate expenditure of school funds to pay for round-the-clock residential care for one severely disabled child, when such funds would support instructional services for a number of other less severely handicapped children? There is mounting sentiment in educational and political forums that mandates to support custodial services are diverting funds from the school's educational mission.

If the appeals court had affirmed the lower court's ruling, some problems for school districts might have been alleviated, but others would have been created. Even if the public schools were relieved of responsibility for placements made primarily for noneducational reasons, sensitive issues would have to be addressed. The First Circuit Court of Appeals surely realized that it would be opening a Pandora's box if it ruled that children considered incapable of learning would not be entitled to education services. How much cognitive ability would a child have to possess to deserve an IEP, and who would make this determination? Moreover, the "Solomon-like task" of separating educational and noneducational needs would have to be confronted.[41]

Rather than focusing on whether specific children are educable and thus entitled to services under the EHA, perhaps the more important question is which governmental agencies should care for children with severe disabilities. Neither the Rochester School District nor professional education associations supporting the district's position claimed that Timothy was not entitled to publicly supported services to help him gain the degree of self-care possible. The controversial issue was whether it was the school district's responsibility to provide such services.

Much current attention is focused on developing policies for youth that address children's health and welfare needs as well as their education needs.[42] The EHA actually attempted to do this by centralizing supervisory authority for handicapped children in the education agency; public schools were expected to enter into agreements with other social service agencies to support some programs for these children. Recognizing that other agencies were not participating as envisioned, in 1986 Congress amended the EHA to stipulate that although state education agencies are responsible "for assuring that the [EHA] requirements are carried out," this "shall not be construed to limit the responsibility" of other agencies in "providing or paying for some or all of the costs of a free appropriate public education to be provided handicapped children. . ."[43] However, only a few states have enacted policies clearly delineating responsibilities across agencies. Rosenfeld recently observed that school districts "have not been able to secure the cost-sharing anticipated by the EHA as other providers, also operating under stringent fiscal lmitations, have backed away from serving handicapped children. Most of the education agencies have received little support from either their own states or the federal government in obtaining this financial help."[44] Comprehensive policies for youth are clearly needed, and public school districts are the logical coordinating agencies. But for

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such children's policies to be effective, responsibilities must be shared across service providers.

The Timothy W. litigation has raised significant policy questions regarding the scope of public school districts' obligations to serve severely handicapped children and the role that other social service agencies should play in this regard. Volatile debate in legislative forums over who must support services for these children seems inevitable. The contention that some handicapped children are beyond the school district's jurisdiction--which would not have been voiced a decade ago--is gaining support among professional education associations. In the absence of coordinated policies with well defined responsibilities across agencies, the stage is being set for a backlash against federal mandates regarding education of the handicapped. If Congress and state legislatures should reduce the public school's obligations without making other provisions for the severely disabled to receive appropriate care, this would be an unfortunate development indeed. Such action could result in an erosion of gains made under the EHA and a reversion to practices where students were arbitrarily excluded from public schools and denied other publicly supported services. While education agencies sorely need relief, we must ensure that handicapped children are not hurt in the process.

Endnotes

1. This paper builds in part on McCarthy, *The Public School's Responsibility to Serve Severely Disabled Children*, 49 Educ. L. Rptr. 453-467 (1988).

2. Timothy W. v. Rochester, New Hampshire, School Dist., 875 F.2d 954 (1st Cir. 1989), *cert. denied*, 110 S. Ct. 519 (1989).

3. McCarthy, *The Public School's Responsibility to Serve Severely Disabled Children*, 49 Educ. L. Rptr. 453-467 (1988).

4. Timothy W. v. Rochester, New Hampshire, School Dist., Petition for Rehearing, Appeal No. 88-1847 (1st Cir.), June 8, 1989, at 5.

5. 20 U.S.C. § 1401 et seq.

6. *See* Battle v. Commonwealth of Pennsylvania, 629 F.2d 269 (3d Cir. 1980), *cert. denied*, 452 U.S. 968 (1981); Lora v. Board of Educ., 456 F. Supp. 1211 (E.D.N.Y. 1978), *remanded*, 623 F.2d 248 (2d Cir. 1980), *on remand*, 587 F. Supp. 1572 (E.D. N.Y. 1984); Frederick v. Thomas, 419 F. Supp. 960 (E.D. Pa. 1976), *aff'd*, 557 F.2d 373 (3d Cir. 1977); Mahoney v. Administrative School Dist. No. 1, 601 P.2d 829 (Ore. App. 1979); Mills v. Board of Educ., 348 F. Supp. 866, 876 (D.D.C. 1972).

7. Boxall v. Sequoia Union High School Dist., 464 F. Supp. 1104, 1114 (N.D. Cal. 1979).

8. *See* North v. District of Columbia Bd. of Educ., 471 F. Supp. 136 (D.D.C. 1979); In the Matter of "A" Family, 602 P.2d 157 (Mont. 1979); text with notes 10-14, *infra*. *But see* Guempel v. State, 387 A.2d 399 (N.J. Super., Law Div., 1978) (custodial care of sub-trainable children does not qualify as education, and school districts are not obligated to incur maintenance costs that are not based on educational needs).

9. *See* Mattie T. v. Holladay, 522 F. Supp. 72 (N.D. Miss. 1981); Smith v. Cumberland School Committee, 415 A.2d 168 (R.I. 1980).

10. Kruelle v. Biggs, 642 F.2d 687 (3d Cir. 1981).

11. *See* Battle v. Commonwealth of Pennsylvania, 629 F.2d 269, 275 (3d Cir. 1980), *cert. denied*, 452 U.S. 968 (1981); Roos, *Litigation: A Necessary Tool for Educational Reform*, 64 Phi Delta Kappan 417-419 (1983).

12. Abrahamson v. Hershman, 701 F.2d 223 (1st Cir. 1983).

13. Clevenger v. Oak Ridge School Bd., 744 F.2d 514 (6th Cir. 1984). *See also* David D. v. Dartmouth School Committee, 775 F.2d 411 (1st Cir. 1985), *cert. denied*, 475 U.S. 1140 (1986); Board of Educ. v. Diamond, 808 F.2d 987 (3d Cir. 1986); Vander Malle v. Ambach, 667 F. Supp. 1015 (S.D.N.Y. 1987).

14. Parks v. Pavkovic, 753 F.2d 1397 (7th Cir. 1985), *cert. denied*, 474 U.S. 919 (1985).

15. Drew P. v. Clarke County School Dist., 877 F.2d 927 (11th Cir. 1989), *cert. denied*, 58 U.S.L.W. 3591 (1990).

16. *See* Burlington School Comm. v. Department of Educ., 471 U.S. 359 (1985), in which the Supreme Court ruled that parents, who have unilaterally placed their child in a private program, can obtain reimbursement if ultimately determined that the school district's proposed program was not appropriate for the child.

17. Matthews v. Davis, 742 F.2d 825, 830 (4th Cir. 1984). *See also* Abrahamson v. Hershman, 701 F.2d 223, 228 (1st Cir. 1983), in which the court noted that "Congress did not intend to burden local school committees with providing all social services to all handicapped children."

18. Cain v. Yukon Public Schools, 775 F.2d 15, 21 (10th Cir. 1985). *See also* Martin v. School Bd. of Prince George County, 348 S.E.2d 857 (Va. App. 1986); Hendry County School Bd. v. Kujawski, 498 So. 2d 566 (Fla. App. 1986).

19. *See* Roncker v. Walter, 700 F.2d 1058, 1063 (6th Cir. 1983), *cert. denied*, 464 U.S. 864 (1983) 1063; Nelson v. Southfield Public Schools, 384 N.W.2d 423 (Mich. App. 1986).

20. Parks v. Pavkovic, 753 F.2d 1397, 1405 (7th Cir. 1985), *cert. denied*, 474 U.S. 919 (1985). *See* text with note 14, *supra*.

21. *Id*.

22. Timothy W. v. Rochester School Dist., No. C-84-733-L (D.N.H. 1988), slip opinion at 4.

23. *Id*., slip opinion at 9, citing Board of Educ. of the Hendrick Hudson Central School Dist. v. Rowley, 458 U.S. 176, 188-189 (1982).

24. *Id*., slip opinion at 9.

25. Parks v. Pavkovic, 753 F.2d 1397, 1405 (7th Cir. 1985), *cert. denied*, 474 U.S. 919 (1985). *See* text with note 20, *supra*.

26. Timothy W. v. Rochester School Dist., No. C-84-733-L (D.N.H. 1988), slip opinion at 22.

27. Id.

28. Timothy v. Rochester, New Hampshire, School Dist., 954 F.2d 875, 960 (1st Cir. 1989).

29. Id. at 970.

30. Id. at 971.

31. Id. at 973.

32. Timothy W. v. Rochester, New Hampshire, School Dist., Petition for Rehearing, Appeal No. 88-1847 (1st Cir.), June 8, 1989, p. 2.

33. Id. at 9-10.

34. Id. at 7.

35. Frank Laski, quoted in Viadero, All Handicapped Must Be Served, Court Concludes, Education Week, June 7, 1989, at 1.

36. Feds Urge Reversal of Opinion Labeling Student Unable to Benefit from Education, Education Daily, October 17, 1988, at 3-4.

37. Court Upholds Educating All Handicapped Children, Education Week, June 7, 1989, at 9. See also Court Won't Touch Ruling Requiring Education for Severely Disabled, Education Daily, November 28, 1989, at 1.

38. No Child Too Handicapped for Special Education, Appeals Court Rules, Education Daily, June 1, 1989, at 4.

39. Gerald Zelin, quoted in Court Rules Schools Must Take All Disabled, New York Times, May 28, 1989, Section 1, at 27.

40. Raymond Yeagley, Superintendent of the Rochester New Hampshire School Dist., personal letter, May 26, 1989.

41. North v. District of Columbia Bd. of Educ., 471 F. Supp. 136, 141 (D.D.C. 1979).

42. See Policy Analysis for California Education, Conditions of Children in California, 1989; Let's Form A National Children's Policy, School Board News, March 6, 1990, at 2; Cohen, C.D.F. Focusing on How Schools Are Serving Children, Education Week, March 14, 1990, at 6.

43. 20 U.S.C.§ 1412(6). Also, the 1988 amendments to the Medicare law prohibit the Health Care Financing Administration from denying Medicaid reimbursement to schools simply because a

service is part of a handicapped child's IEP. Medicare Catastrophic Coverage Act, P.L. 100-360 § 411, amending 42 U.S.C. § 1396b. However, the distinction between medical and educational needs of specific children remains ambiguous. See New Medicaid Rules May Be Months Away, But Schools Should Not Delay Claims, Education Daily, August 22, 1988, at 1-2.

44. Rosenfeld, Role of Schools for Handicapped Children at Issue, Education Week, February 8, 1989, at 32.

FUNDING STANDARDS FOR SPECIAL EDUCATION: THE BRIDGE BETWEEN PROGRAMS AND FINANCE

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FUNDING STANDARDS FOR SPECIAL EDUCATION: THE BRIDGE BETWEEN PROGRAMS AND FINANCE

INTRODUCTION

Educational funding is always a compromise between what is programmatically desireable and what is financially feasible (Guthrie, Garms, & Pierce, 1988). The result is often conflict between those most concerned with achieving adequate or improved programs for students and those responsible for balancing state and local education budgets (Kirst, 1984). This is especially true with special education where emotions about the educational rights of handicapped students run high and numerous advocacy groups actively pursue their objectives (Larson & Melugin, 1974). While changes, such as lower class sizes, greater use of educational aides, and provision of additional services, may be beneficial for students, they are not without their costs. The process of reaching an acceptable balance occurs in a political arena where useful data are not always available or are overwhelmed by more powerful special interests. It is important for educational policy makers to be able to assess accurately the costs of proposed educational program changes before committing to provide them; otherwise, commitments may not be able to be honored if the required expenditures exceed the available resources.

What is needed is a means of translating special education program features into costs. That is the purpose of funding standards and the subject of this paper. In the next section, the concept of funding standards as a methodology for attaching dollars to special education program standards is advanced. This is followed by an application of the approach to cost estimation in an actual state-level educational standard setting process. The final section comments on the advantages and disadvantages of this approach. While special education is the focal point for this discussion, the general methodology has direct relevance to regular education and other specialized areas of education as well.

CONCEPT OF FUNDING STANDARDS

Funding standards are based on educational program standards. However, program standards are generally in the form of specifications such as eligibility criteria for program admission (e.g., IQ score below a cutoff number for EMR students), types of acceptable programs and services, student/teacher ratios, caseloads for specialists, and use of aides. To translate these into cost estimates requires recasting program standards into funding standards. To accomplish this translation it is necessary to identify program features which influence costs.

Components of Funding Standards

Generally, funding standards require specification of four program aspects:

1. Magnitude of the program.
2. Appropriate types of programs and services.
3. Eligible resources in the programs and services.
4. Program features or limitations.

Magnitude. The magnitude of an educational program is primarily determined by the number of students eligible for service. Programmatically, this is determined by eligibility criteria, such as a maximum IQ score for educable mentally retarded (EMR) students or a specified ability-achievement discrepancy for learning disabled (LD) students.

Funding standards in this area transcribe these program standards into an estimate of the population to be served. This could be accomplished in several ways; the most common approaches are:

Total percentage of the school age population (e.g., 12%)

Percentage of the school age population by exceptional category (e.g., 2% EMR, 4% LD)

Percentage of the school age population by program organization (e.g., 6% itinerant teacher, 3% resource room, 2% special class)

For existing stable programs it may be possible to use the current number of students served as a base and adjust the number expected to be served for any anticipated program changes. New programs require estimates based upon similar types of programs, research findings, and/or professional judgment.

Programs and standards. Funding standards for appropriate programs and services specify those which are eligible for state support. They could include instructional, support, and administrative functions. Examples are:

Itinerant teacher

Resource room

Special classes (part-time and full-time)

Special centers or schools

Private schools or placement

Related services such as occupational therapy, physical therapy, mobility training, braille, adaptive physical education

Support services such as psychological or counseling services

Administrative services such as program administration, supervision, clerical assistance

This list, when identified, establishes the range of programs and services which are expected to be provided to students in special education and which will be funded (in whole or part) by the state.

Resources. Funding standards for eligible resources specify both the type and the level of resources which would be funded. The types of resources include all categories of expenditures which would be eligible for support. Typical examples are the standard object of expenditure accounting elements, such as:

Personnel (e.g., teachers, aides, administrators, school psychologists)

Benefits for eligible personnel

Purchased services

Supplies and materials

Equipment

Facilities

Level of use standards establish the quantities of these resources which qualify for funding. The most important standards in this area are those for personnel, particularly the instructional staff. These standards are most commonly specified through personnel ratios specifying acceptable class sizes or caseloads for various types of special educational personnel. It is not uncommon for staffing ratios to be included in educational program standards. If this is the case, the program standards can be used directly as funding standards. Examples of staffing standards include:

Student/teacher ratios for each instructional setting (e.g., itinerant teacher, resource room, special class). There could be different ratios for various types of students within a given setting (e.g., 12 EMR students per special class teacher and 15 LD students per special class teacher).

Instructional aides

Other instructional personnel

Psychologists

Guidance counselors

Social workers

Other specialists

Supervisors

Administrators

Clerical staff

The staffing standards, when combined with the number of students to be served and the program/service standards, allow calculation of the number of staff required to operate the anticipated programs.

In addition, it is necessary to establish prices for each of the types of personnel so that their costs can be estimated. Two different types of prices can be used for calculating expenditures for personnel. If the purpose of the cost determination is to project the estimated program cost, then average salary and benefit amounts are generally adequate. While not exact, they are frequently sufficiently precise for cost estimation or planning purposes. If reimbursement to school districts for actual operating costs is the objective, then the use of actual personnel costs is more appropriate.

Beyond personnel, other level of use funding standards for resources include:

Instructional supplies and materials, generally on a cost per student or per teacher basis. Similar to the personnel standards, it may be useful to separate these by type of instructional setting (e.g., $300 for a special class, $200 for an itinerant teacher).

Instructional equipment on a cost per student or per teacher basis. In addition to varying the amounts by instructional setting, it may be appropriate to establish a higher amount for new classes to support start up purchases and a smaller amount for ongoing classes where a certain level of existing equipment is assumed.

Travel allowances for various personnel

Building space, generally maintenance and operating costs for special education classrooms and service areas.

These types of standards incorporate an implied quantity and price for these other resources into a single standard amount. This is a much more efficient method than attempting to identify individual supply and equipment items or building expenditures along with their prices or to detail the travel pattern of mobile personnel.

Program features. Funding standards for program features generally apply limits or constraints on the use of programs or resources consistent with good program practice. For example, it would be possible to restrict some programming options if they were thought to be inappropriate (e.g., special classes for gifted students).

In summary, funding standards are based on program standards for special education programs and services and the expected mode of operation of these programs. They provide basic information about the fiscally relevant characteristics of educational programs and services for exceptional students.

Simulation Model

The next step in linking program and costs is the creation of a simulation model to project the fiscal impact of these funding standards for the population of students to be served. This involves collection and organization of funding standard data on students, types of programs to be provided, the resources which comprise these programs, the prices of the resources, the allocation of students among the available programs, and limitations on the use of the programs and services for students in special education. The result is a resource-cost type model (Hartman, 1983) which uses the funding standards to project the costs of special education.

Recent technological advances in microcomputer hardware and software have made it possible for policy analysts to develop their own simulation models and rescued this critical process from the exclusive domain of computer programmers (Hartman, 1990). For example, electronic spreadsheets permit nonprogrammers to create individually tailored simulation models which can be easily operated and quickly modified. This flexibility substantially enhances the usefulness and timeliness of funding standard simulation models.

NEW SPECIAL EDUCATION STANDARDS IN PENNSYLVANIA

The balancing act between program and fiscal concerns and the need for reliable cost estimates for program proposals has emerged in full flower in Pennsylvania. A funding shortfall in 1988-89 required the Legislature to make a deficit appropriation of $100 million for required special education payments to school districts--payments which had not been made during the year as scheduled. This unexpected necessity prompted the Legislature to mandate that the State Board of Education revise and approve regulations and standards for special education by March 1990 "to assure fiscal accountability, prudent management, appropriate education support services and special classes to meet the needs of pupils," (Act 43 of 1989).

The ensuing process has forced the state to confront two conflicting objectives. On the program side, Pennsylvania funds 100% of approved excess costs for special education (Hartman, 1988). In practice, once district programs are approved by the Pennsylvania Department of Education (PDE) the state is obligated to subsidize their full excess costs. On the fiscal side, only a finite amount is appropriated for special education by the Legislature and these funds are limited by the state's available revenues and competing claims from other state aid programs, including regular education subsidies. Disapproval of special education programs by PDE because of lack of funds would not be acceptable on either educational or legal grounds (Levin, 1989). So there is a dilemma: the conflict between the programmatic requirement to fund any and all approved special education programs and the fiscal requirement to balance the budget and fund other programs as well.

One of the major thrusts in the development effort of the mandated revision of the standards and regulations for special education by the State Board of Education and PDE has been the dual concern over the growing number of nonhandicapped students placed in special education and the substantial cost impact of this practice.

> Q: Isn't the state required by law to pay the cost of special education for any child enrolled in a special education class?
>
> A: The law provides for full funding of the EXCESS COST that is incurred in the provision of APPROPRIATE special education services. However, when the law was passed it was not anticipated, nor did it intend, that the availability of special education services would invite the participation of an EXCESS OF STUDENTS who are not handicapped. Since some of the supports provided by special education are also needed by non-exceptional students, there has been a tendency for special education to become the program of choice for students who are at risk of failure.
>
> Q: Does that mean then that some students ended up in special education classes when they should have been in regular education classes?
>
> A: Absolutely. Over time, the number of "at-risk" types of students being placed in special education programs grew exponentially until the cost of providing special education began to exceed available funds. ("Questions and Answers," 1990, p. 2-3)

As a result, one of the principal objectives of the new standards was to reduce the number of students inappropriately placed in special education. However, it was recognized that the remedial and support services provided to the "at-risk," but non-handicapped students were often the only ones presently available for these students.

> Q: What help do the proposed regulations and standards provide for the regular education teacher whose classroom has a number of slow learners and students with remedial needs?
>
> A: The proposed regulations and standards recognize that before the flow of slow learners and those with remedial needs into special education can be stemmed, there must be in place the necessary instructional support. ("Questions and Answers," 1990, p. 3)

INSTRUCTIONAL SUPPORT TEAMS

The strategy selected was to establish a new service to improve the referral process for special education: the instructional support team (IST). The responsibility of the IST is to:

> (1) Implement and manage the screening and evaluation process
>
> (2) Provide instructional support in the student's school to the student and the student's regular classroom teacher. (Pennsylvania Department of Education, 1990, 324.24 (e).)

The IST is to be chaired by the building principal and should include the student's regular classroom teacher, the support teacher assigned to the student's building and other persons as appropriate, such as parent, speech correctionist, guidance counselor, reading specialist, school psychologist, or special education teacher.

The support teacher is a new position designed to be the main person to facilitate the IST concept. As such, the support teacher

> is to facilitate the screening of students suspected of being eligible for special education services. . . may provide consultation, technical assistance and training to the teachers and parents of identified students. . . and may also provide direct instructional services to identified students in regular education environments for the purpose of determining the student's instructional level. (Pennsylvania Department of Education, 1990, 324.24 (d).)

The principal of each school is required to maintain a directory of the educational programs and services available to students in that building. It is intended that this be a comprehensive continuum of services with an emphasis on services which maintain students in the regular classroom, including peer support and exchange for instructional personnel, instructional consultation from the support teacher or other appropriate personnel, and classroom training for instructional personnel. The clear expectation is that with the IST in place and functioning properly there will be a substantial reduction in the number of students inappropriately referred to and placed in special eduction, and consequently, the excess cost funding required from the Commonwealth will also be reduced.

For its part the Commonwealth will provide two types of financial support for ISTs. The first is training for local educational personnel. No district would be required to implement the ISTs until the building personnel have received proper training on the process and operation of the IST approach by PDE staff. It is estimated that this would require a five year phase-in with approximately twenty percent of districts receiving the necessary training each year. The costs of training are to be funded through federal EHA discretionary monies. The second cost for ISTs is for the new support teachers. These would qualify for excess cost funding and would be reimbursed fully by the Commonwealth.

FUNDING STANDARDS AND SIMULATION MODEL FOR IST

The two major questions for projecting the programmatic and fiscal impact of this new program are:

What will be the effect of the IST on new special education referrals?

What will the net cost be for implementing the IST throughout the state?

A simulation utilizing funding standards for the IST program can be used to project answers for both questions. A schematic diagram of such a simulation model is presented in Figure 1. As shown, there are four components to the model: a section for projecting the reduction of students referred to special education as the IST is implemented; a second section which estimates the cost savings in special education due to the student reductions; a separate section estimating the costs of implementing the ISTs; and finally, an estimate of the net cost impact (new IST costs less cost reductions) of the program.

[Insert Figure 1 here]

To construct this model requires identifying the specific data elements or variables to be utilized, establishing the funding standards which are the values for the selected model variables, formulating the mathematical relationships among the variables, and stipulating the content and format of the output of the model.

Student Reductions with IST

This first section of the simulation model is a projection of the number of students which would be kept out of expected placement in special education through the intervention of the IST. The specific format of the section is shown in Table 1. A

FIGURE 1
SIMULATION MODEL DIAGRAM FOR IST

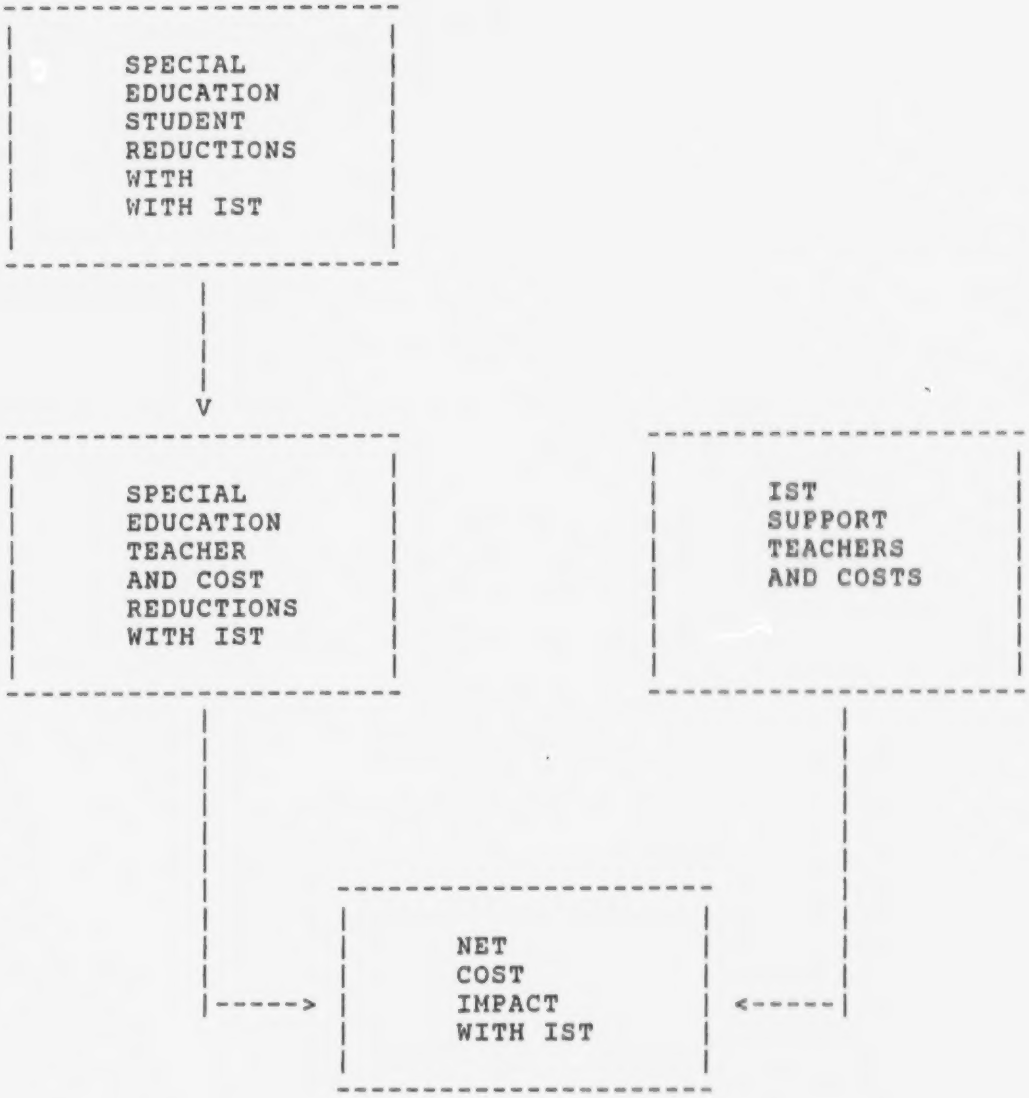
SPECIAL EDUCATION STUDENT REDUCTIONS WITH WITH IST
SPECIAL EDUCATION TEACHER AND COST REDUCTIONS WITH IST
IST SUPPORT TEACHERS AND COSTS
NET COST IMPACT WITH IST

TABLE 1

SPECIAL EDUCATION STUDENT REDUCTIONS WITH IST PHASE-IN

* * *

NEW STUDENTS/YR AFFECTED BY IST
ALL = 16,000

IST COVERAGE PHASE-IN (FOR NEW STUDENTS PER YEAR)

1991-92	1992-93	1993-94	1994-95	1995-96
20%	40%	60%	80%	100%

% REDUCTION OF NEW STUDENTS TO SPECIAL EDUCATION WITH IST

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
5.0%	10.0%	15.0%	20.0%	25.0%

* * *

		GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	ANNUAL TOTAL	CUM TOTAL
1991-92	# NEW	3,200					3,200	
	# RED	160					160	160
1992-93	# NEW	3,200	3,200				6,400	
	# RED	320	160				480	640
1993-94	# NEW	3,200	3,200	3,200			9,600	
	# RED	480	320	160			960	1,600
1994-95	# NEW	3,200	3,200	3,200	3,200		12,800	
	# RED	640	480	320	160		1,600	3,200
1995-96	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	640	480	320	160	2,400	5,600
1996-97	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	640	480	320	3,040	8,640
1997-98	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	800	640	480	3,520	12,160
1998-99	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	800	800	640	3,840	16,000
1999-00	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	800	800	800	4,000	20,000
2000-01	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	800	800	800	4,000	24,000
2001-02	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	800	800	800	4,000	28,000
2002-03	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	800	800	800	4,000	32,000
2003-04	# NEW	3,200	3,200	3,200	3,200	3,200	16,000	
	# RED	800	800	800	800	800	4,000	36,000

* * *

thirteen year time period was established for the model; this allowed a complete turnover of students in special education.

[Insert Table 1 here]

Funding standards. At the top of the section are the funding standards which are incorporated into the model. They are derived from program standards or expectations for the implementation of the IST. The number of new students annually affected by the IST is the first funding standard. The description of the IST by PDE made it clear that ISTs would be utilized only for new students potentially entering special education; for political reasons the new regulations guaranteed that all current students in special education could remain in their existing placements and continue to receive services specified in their individual educational programs. Therefore, it is necessary to limit the application of IST effects to new students entering special education. From PDE data, these are estimated at 16,000 students per year, assuming a steady state condition (i.e., an equal number of students entering and leaving special education each year).

Next, the phase-in pattern of IST is incorporated into the model. A five year phase-in with equal portions each year would have an annual increase in IST coverage of twenty percent per year. Assuming that the initial year of training for the first group of districts implementing IST would be in 1990-91 (the first year following the adoption of the new regulations and standards), the first year of IST operation begins in 1991-92.

The designers of the IST also envisioned the equivalent of a learning curve for IST effectiveness once district began operation of an IST program. Their assumption was that in the first year there would be a five percent reduction in the number of new students going into special education. In subsequent years an additional five percent reduction per year was assumed up to a maximum of twenty-five percent.

Calculations. These two phase-in elements are combined in the model. First, the twenty percent IST coverage phase-in is modeled by dividing the total new students (16,000) into five equal groups of 3,200 students each and bringing one group per year into operation (3,200 students in 1991-92, 6,400 students in 1992-93, and so forth). The second step is to apply the percent reduction to each group of students covered by IST. In 1991-92 Group 1 of 3,200 students would be reduced by five percent or 160 students; the next year Group 1 would have a ten percent rate for a reduction of 320 students, while Group 2, in its first year of operation, would have a five percent reduction of 160 students, yielding a total reduction of 480 students. The phase-in continues until 1999-2000 when all new students are covered by IST and all IST teams are operating at maximum effectiveness. At this point there is a constant reduction of 4,000 students per year entering special education in comparison with the existing system.

The final column provides the cumulative total of student reductions. This is the critical number for the model because it represents the total reduction in the magnitude of the special education program. The 160 students which do not enter special education in 1991-92 because of the IST are permanent reductions in the size of the program; it is assumed that their needs are more appropriately served in regular education and they do not ever come into special education. The impact of IST reductions continues throughout the time period covered by the model and by the last year a 36,000 student reduction is projected.

Note that all of the funding standards (input data) are assumptions about the future implementation and operation of the IST. As will be discussed in a later section, because the model was constructed in a spreadsheet program it is possible to change any or all of these variables easily and to see the results instantly.

Cost Savings Due to Student Reductions in Special Education

The second section of the simulation model is shown in Table 2. Here, the student reductions are translated into reductions in special education teachers and costs. Both the annual and cumulative reductions are projected in the model.

Funding standards. Once again, the funding standards used in the calculations are shown at the top of the section. The current total special education population is estimated at 208,000 students. In this baseline run a steady state condition is assumed with an equal number of graduating and entering students per year. Teacher costs are calculated using average salary and benefit amounts. Finally, the number of teachers which can be reduced to match student reductions is determined through a student/teacher ratio.

[Insert Table 2 here]

Calculations. In the calculation area of this section annual determinations are made of the number of existing and new special education students. The current students decrease by the annual number graduating until all are assumed to have passed through the system. The potential new students in special education (without IST) are shown next; in the reverse pattern to the current students, they grow annually by the number entering the system. From this cumulative potential total are subtracted the cumulative reductions due to IST; these numbers are taken from the prior model section. The result is a net cumulative number of new students in special education each year. The last student column combines the current and net cumulative new students to give the total number of students in special education.

The next component of this section calculates the reduction in number of teachers needed for special education due to the student reductions in that year. This is determined by dividing the annual reduction amount by the student/teacher ratio. For example, in 1992-93 there would be an estimated reduction of 480 students. (See Table 1.) With a student/teacher ratio of 12, this would result in 40 fewer teachers.

Cost reductions are calculated by multiplying the number of reduced teachers by the total estimated cost per teacher. While using only salary and benefits costs underestimates the total cost savings by omitting associated supply and equipment expenditures, these two elements capture most of the costs

TABLE 2
COST AND TEACHER IMPACT OF SPECIAL EDUCATION STUDENT REDUCTIONS WITH IST

* * *

TOTAL SPECIAL EDUCATION POPULATION	208,000	AVERAGE SALARY PER TEACHER	$31,000
GRADUATING STUDENTS PER YEAR	16,000	AVERAGE BENEFITS PER TEACHER	25%
NEW STUDENTS PER YEAR	16,000	TOTAL COST PER TEACHER	$38,750
		STUDENT/TEACHER RATIO	12

* * *

YEAR	STUDENTS IN SPECIAL ED					ANNUAL REDUCTIONS		CUMULATIVE ANNUAL REDUCTIONS	
	CURRENT REMAINING	CUMULATIVE POTENTIAL	------------------> REDUCTION	NET	TOTAL STUDENTS	TEACHERS	COSTS	TEACHERS	COSTS
1991-92	192,000	16,000	160	15,840	207,840	13	$503,750	13	$503,750
1992-93	176,000	32,000	640	31,360	207,360	40	$1,550,000	53	$2,053,750
1993-94	160,000	48,000	1,600	46,400	206,400	80	$3,100,000	133	$5,153,750
1994-95	144,000	64,000	3,200	60,800	204,800	133	$5,153,750	266	$10,307,500
1995-96	128,000	80,000	5,600	74,400	202,400	200	$7,750,000	466	$18,057,500
1996-97	112,000	96,000	8,640	87,360	199,360	253	$9,803,750	719	$27,861,250
1997-98	96,000	112,000	12,160	99,840	195,840	293	$11,353,750	1,012	$39,215,000
1998-99	80,000	128,000	16,000	112,000	192,000	320	$12,400,000	1,332	$51,615,000
1999-00	64,000	144,000	20,000	124,000	188,000	333	$12,903,750	1,665	$64,518,750
2000-01	48,000	160,000	24,000	136,000	184,000	333	$12,903,750	1,998	$77,422,500
2001-02	32,000	176,000	28,000	148,000	180,000	333	$12,903,750	2,331	$90,326,250
2002-03	16,000	192,000	32,000	160,000	176,000	333	$12,903,750	2,664	$103,230,000
2003-04	0	208,000	36,000	172,000	172,000	333	$12,903,750	2,997	$116,133,750
13 YEAR TOTALS						2,997	$116,133,750		$606,398,750

* * *

associated with teacher reductions. Both teacher and cost reductions start small (reflecting the small number of student reductions in the early years of IST implementation) and reach a plateau as full implementation is reached in 1999-2000.

The last two columns present the cumulative annual reductions of teachers and costs. These amounts represent the total reductions for a given year over the current situation. The cumulative aspect is necessary as the number and costs of teachers reduced in the first year are also saved in the second and succeeding years. Therefore, the amount saved in a given year represents the cumulative savings of all prior years. In the baseline run the total savings over the thirteen year period is more than $600 million.

IST Costs and Cost Comparisons

The final section of the simulation model, shown in Table 3, combines the calculation of the costs of implementing the IST with a comparison of the cost savings possible through student reductions. The result is a net cost (or savings) with IST over the time period in the model.

[Insert Table 3 here]

Funding standards. Most of the funding standards at the top of the section were originally established in earlier sections of the model and are included for reference in this section; they are: new students affected by IST, student/teacher ratio, total cost per teacher, and IST phase-in. The new funding standards are those necessary to calculate the number of support teachers for the IST teams. The regulations specify that IST is for

TABLE 3
COMPARISON OF SAVINGS AND COST WITH IST

* * *

NEW STUDENTS/YR AFFECTED BY IST

ALL =	16,000
STUDENT/TEACHER RATIO	12

IST SUPPORT TEACHER ASSUMPTIONS

TOTAL ELEMENTARY STUDENTS	900,000	TOTAL SUPPORT TEACHERS	1,800
SUPPORT TEACHER RATIO	500	TOTAL COST PER TEACHER	$38,750

IST PHASE-IN

1991-92	1992-93	1993-94	1994-95	1995-96
20%	40%	60%	80%	100%

* * *

YEAR	SUMMARY TEACHER PROJECTIONS			SUMMARY COST PROJECTIONS		
	CUMULATIVE TEACHER REDUCTIONS	NEW SUPPORT TEACHERS	INCREASE (DECREASE) TEACHERS	CUMULATIVE ANNUAL COST SAVINGS	ANNUAL SUPPORT TEACHER COSTS	NET ANNUAL COST IMPACT
1991-92	13	360	347	$503,750	$13,950,000	$13,446,250
1992-93	53	720	667	$2,053,750	$27,900,000	$25,846,250
1993-94	133	1,080	947	$5,153,750	$41,850,000	$36,696,250
1994-95	266	1,440	1,174	$10,307,500	$55,800,000	$45,492,500
1995-96	466	1,800	1,334	$18,057,500	$69,750,000	$51,692,500
1996-97	719	1,800	1,081	$27,861,250	$69,750,000	$41,888,750
1997-98	1,012	1,800	788	$39,215,000	$69,750,000	$30,535,000
1998-99	1,332	1,800	468	$51,615,000	$69,750,000	$18,135,000
1999-00	1,665	1,800	135	$64,518,750	$69,750,000	$5,231,250
2000-01	1,998	1,800	(198)	$77,422,500	$69,750,000	($7,672,500)
2001-02	2,331	1,800	(531)	$90,326,250	$69,750,000	($20,576,250)
2002-03	2,664	1,800	(864)	$103,230,000	$69,750,000	($33,480,000)
2003-04	2,997	1,800	(1,197)	$116,133,750	$69,750,000	($46,383,750)
13 YEAR TOTALS				$606,398,750	$767,250,000	$160,851,250

* * *

elementary students only; there are an estimated 900,000 elementary students in the state. A support teacher ratio of 1 for every 500 elementary students was also established in the planning for this service. These estimates yield a need for 1,800 support teachers at full implementation.

Calculations. With the same IST phase-in pattern as assumed before, 360 new support teachers would be required for each of five years. At that point the full complement of 1,800 would be engaged. The cumulative number of teacher reductions (Table 2) is compared on an annual basis with the requirement for new support teachers and the net annual increase or decrease in teachers is determined. A similar comparison is made for the cumulative annual costs of each component. The results, projected from the assumed funding standards specified at the top of the section, indicate that in the early years the additional cost of support teachers will be much greater than the cost savings achieved through student reductions. After ten years the cumulative annual savings are greater than the support teacher costs and the net savings continue to grow. However, at the end of the thirteen year period there is a net cost increase of approximately $160 million.

The costs in all calculations are constant dollar amounts. This results from making the simplifying assumption that the rate of inflation for salaries and benefits is equal to the chosen discount rate. This allows the cost impacts to reflect the programmatic changes anticipated and not be confounded with monetary changes as well.

Sensitivity Analysis

The simulation model presented above projects programmatic and fiscal results based on a series of funding standards. For a new program, such as IST, many of the funding standards are, in reality, assumptions about what will (or could) happen when the program is implemented. There is no guarantee that the future will unfold as anticipated in the model. Consequently, it is important to test the sensitivity of the simulation results to the assumptions which were used in the model calculations. If relatively small and feasible changes in the initial or baseline values of the funding standards cause substantial changes in the calculated results, then it becomes critical to examine the possible range of outcomes which could result from varying the initial assumptions. It also identifies those funding standards which require greater scrutiny and effort to improve their accuracy and reliability.

This procedure, known as sensitivity analysis, is illustrated with this simulation model. The major funding standards for which values were established were:

Number of new students entering special education annually

Student/teacher ratio in special education for those students which would have been enrolled without IST

Maximum reduction in new special students achieved by IST (and the phase-in pattern to achieve the maximum)

Support teacher ratio to elementary school students

The baseline values for these funding standards were used in the initial projections shown in Tables 1-3; they are repeated for reference in Table 4 along with several of the key results from the simulation model. The table illustrates the sensitivity analysis in which values for each of these four funding standards was changed and the model results recalculated. With a simulation model built with a spreadsheet program this involves only entering the new value and the changed results are recalculated instantaneously.

[Insert Table 4 here]

New students. The first sensitivity analysis is for the new students entering special education annually. A higher value of 20,000 students is used to test the effects of an annual growth of approximately two percent per year, which has been the experience in the past several years. The results indicate that there are substantial changes in the number of students reduced (up to 45,000 from 36,000 in the baseline case), a large reduction in the net number of teachers over the thirteen year period (up to 1,953 from an initial projection of 1,197), and a drop in the thirteen year total costs from $160 million to just under $8 million. Further, the year in which the annual savings from reductions exceed the annual IST costs is advanced one year. For this analysis it is important to remember that the model calculates the results compared to what would have occurred without IST. Consequently, the larger reductions are the result having a larger and growing special education population. Without the IST and with this assumed growth rate of 4,000 more students entering special education than graduating each year, the total student population would have grown from the assumed steady state in the baseline case of 208,000 to 260,000 by the

TABLE 4
SENSITIVITY ANALYSIS

PROJECTION	FUNDING STANDARD VALUES				SIMULATION MODEL RESULTS			
	# NEW STUDENTS PER YEAR	STUDENT/ TEACHER RATIO	MAXIMUM REDUCTION WITH IST	SUPPORT TEACHER RATIO	TOTAL STUDENT REDUCTION	13 YEAR TOTAL CHANGES		1st YEAR OF COST SAVINGS
						TEACHERS	COSTS	
BASELINE	16,000	12	25%	500	36,000	(1,197)	$160,851,250	2000-01
SINGLE STANDARD CHANGES								
1. NEW STUDENTS	20,000				45,000	(1,953)	$7,711,250	1999-00
2. S/T RATIO		20			36,000	0	$403,000,000	--
3. MAXIMUM REDUCTION			40%		56,800	(2,933)	($183,752,500)	1998-99
4. SUPPORT RATIO				600	36,000	(1,497)	$32,976,250	1999-00
COMBINATION CHANGES								
5. NEW STUDENTS & S/T RATIO	20,000	20			45,000	(450)	$311,937,500	2002-03
6. NEW STUDENTS & MAXIMUM REDUCTION	20,000		40%		71,000	(4,117)	($420,747,500)	1997-98
7. S/T RATIO, AND MAXIMUM REDUCTION		20	40%		56,800	(1,040)	$196,850,000	2000-01
8. NEW STUDENTS, S/T RATIO, AND MAXIMUM REDUCTION	20,000	20	40%		71,000	(1,750)	$54,250,000	1999-00
9. NEW STUDENTS, S/T RATIO MAXIMUM REDUCTION, SUPPORT RATIO	20,000	20	40%	600	71,000	2,050	($73,625,000)	1998-99

end of the projection period. The introduction of IST is projected to keep total special education population to 215,000 in the last year.

Student/teacher ratio. This sensitivity analysis raises the student/teacher ratio from 12 to 20. The rationale is to see the impact if those students which did not enter special education would have received less intensive special education services, such as from a resource room or itinerant teacher rather than in a special class with a lower ratio. The changed ratio has no effect on the number of students reduced, but only changes the number of teachers and the cost reductions. With a higher student/teacher ratio assumed, there are fewer teacher reductions and no net teacher reductions over the study period. With fewer teacher reductions the net costs are much greater than the baseline amount and annual IST costs exceed cost savings throughout the thirteen year period.

Maximum reduction with IST. This projection changes the pattern of reduction of new students to be achieved by the IST, beginning at 10% in the first year of operation (rather than 5% in the baseline) and rising to 40% in the fifth year (instead of 25%). The effect of this change is dramatic: the projected number of students to be reduced increases to 56,800; the number of teachers reduced rises to 2,933; and the costs shift to a savings of $183 million. The first year of annual cost savings is accelerated two years to 1998-99. If the IST could achieve this level of effectiveness, there would be a substantial programmatic and fiscal impact.

Support teacher ratio. This funding standard only impacts the cost of the IST implementation; reductions of new students entering special education and the associated teacher and cost reductions are not changed. The change from 500 to 600 elementary students per support teacher would increase the net teacher changes to a decrease of 1,497, the projected cost over the study period would drop to $33 million, while the year of reaching annual cost savings would be advanced by one year to 1999-2000.

All of the four main funding standards appear to have a substantial impact on programmatic and financial results. Three of the four (assuming a growth of incoming students, raising the maximum reductions achieved by IST, and raising the support teacher ratio) have the effect of making the IST program more fiscally attractive. On the other hand, raising the student/teacher ratio for reduced special education students has the opposite effect; it increases the costs of implementation. The sensitivity analyses for the individual funding standards indicate that the simulation outcomes are very sensitive to all four standards tested. The policy implication is that careful attention should be paid to values used for the funding standards and additional effort to achieve greater reliability about the actual future results would be well spent.

Combinations of funding standard changes. In addition to the single standard changes, several combinations of changes are also tested to project the joint effects. In the first example (#5), increasing the number of new students and raising the student/ teacher ratio simultaneously create effects which work in opposition with one another. The additional savings caused by the new student growth are counterbalanced by the fewer teachers reduced as a result of the increased ratio. The net results in both the thirteen year totals for teachers and costs are in between the individual sensitivity analysis results for each funding standard.

In the second example (#6), the new student growth and the raised maximum effectiveness of the IST both work to increase the reductions of students, teachers, and costs. The combined effect of these two changes raise the savings well beyond the individual funding standard effects. The remainder of the combinations tested function in a similar manner.

CONCLUSIONS

The concept of funding standards allows the program standards for new or modified educational programs to be translated into projected costs for implementing the program. To implement this approach, it is necessary to identify the appropriate funding standards which specify the magnitude of the program, the appropriate types of programs and services, resources eligible for funding in the each of the programs and services, and any relevant program features or limitations. Creation of a simulation model which utilizes these funding standards forces the analyst to specify the relationships among them and determine the desired format of the results. The process of modeling the program necessitates a thorough understanding and gaps in knowledge or understanding of the program and its operation can be made obvious. This is an extremely valuable exercise for a complex problem.

As shown in the example of the newly proposed IST program to reduce the number of students entering special education, a complex and interconnected program can be modeled with a spreadsheet program. While the results are primarily for illustration, it is clear that the programmatic and fiscal results are highly sensitive to assumed values for program standards. Some of the values can be set by policy makers, primarily the support teacher ratio. Others are outcomes of the operation of the program which can be influenced, but not controlled by policy makers. For example, the growth in special education students, the types of students which the IST maintains in regular education (and prevents from entering special education inappropriately) and the student/teacher ratio which would have been actually employed for them, and the maximum effectiveness of the IST, are all critical elements, but are primarily determined by building level personnel and cannot be mandated from above. The best hope is to create policies which influence IST personnel's behaviors in desirable ways and for planning purposes to simulate the possible outcomes of their likely choices.

The power of the funding standards model is threefold. First, the development of the model forces both educational and fiscal policy makers to come to grips with what are appropriate programs and services for special education. The model requires specificity; rhetoric and generalities do not suffice. Second, and perhaps most important for the development process, it provides a common language among participants. Rather than posturing for a program or practice based on subjective beliefs alone, the results from the model provide uniform information on numbers of students served in each type of program, personnel required, and district and state costs. Finally, as a microcomputer model it permits extensive testing of alternative formulations of program/funding standards as well as different levels of the standards. For example, the fiscal impact of a range of student/teacher ratios can be examined quickly and efficiently. Tradeoffs and compromises along program lines can be made with a full understanding of their financial impact.

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CONSIDERATIONS ABOUT THE COSTS AND BENEFITS OF THE RURAL INITIATIVE PROGRAM OPERATED BY THE REGIONAL EDUCATIONAL LABORATORIES, 1987-1990

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Considerations About the Costs and Benefits of the Rural Initiative Program Operated by the Regional Educational Laboratories Between 1987 and 1990

Introduction and Motivation

This paper is offered as part of a symposium on the costs and benefits of an investment in rural education. The subject of this piece is the Rural Initiative program, the newest federal program designed especially to assist the nation's rural schools. This program, administered by the United States Department of Education through the nine Regional Educational Laboratories, is now in its third year.

The content of this paper is organized under four headings. "Introduction and Motivation" presents the topic of the paper, as well as anecdotal and other evidence of the applicability of cost analysis techniques to education decisionmaking. "Background on Cost Analysis in Current Education Literature" provides the results of an ERIC search on that topic and a synthesis of cost analysis methods presented in two often cited texts. "Background on the Rural Initiative Program" provides an explanation of the congressional authorization and funding of the program, the program solicitation requirements issued subsequently to the Laboratories by the Department of Education, and examples of the unique and common aspects of the program as operated by the individual Laboratories. "Cost Analysis Applied to the Rural Initiative Program" describes what cost analysis has been applied previously to the initiative and what considerations should be kept in mind for future cost analyses that may be applied to the program.

To begin...a digression.

In a recent meeting of a local school board in AEL's Region[1], two cost-related policy issues were discussed. First, discussion focused on an audience member's contention that the board could save $50,000 by moving the date of a special bond issue election from mid-December to the mid-November general election. Though at a previous meeting the board had voted unanimously to establish the December date, one board member sporting a "re-elect me" button volunteered that he was sympathetic to the audience member's contention. Other board members countered that the December date had been selected very deliberately; that experience showed that the bond issue would have a much greater chance of being passed if it were considered apart from the general election. Second, a discussion focused on summer school arrangements including tuition rates for out-of-district, regular in-district, and free-and-reduced-lunch-eligible students. When the "select-me" board member spoke in favor of the arrangements, he was countered immediately by another member who averred that since the state did not reimburse the district for summer school and since the proposed tuition levels left the local district with a $50,000 deficit, she thought tuition should be raised. Further, she said, "select-me's" behavior seemed very illogical. Earlier he was interested in saving $50,000; now, he's trying to give $50,000 away. The debate seemed to be more about politics than cost analysis. And yet, cost effectiveness was certainly the basis of the board's original decision to hold the election in December. And a rough cost effectiveness analysis contributed the setting of tuition levels for summer school--a remediation opportunity targeted for the district's at-risk students.

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[1] The Appalachia Educational Laboratory (AEL), Inc., is contracted by the United States Department of Education to operate the Regional Educational Laboratory that serves Region 3: Kentucky, Tennessee, Virginia, and West Virginia.

The digression is intended to highlight the growing frequency with which practitioners and lay boards deal with policy issues requiring cost analysis and the complexity of the environment in which these issues are debated. And these examples are about relatively simple problems that cost analysis could be used to address. A much more complex and pervasive problem confronting educators and policymakers in the Appalachian Region that requires the application of cost analysis techniques is school consolidation and school closings.[2]

Economist David Mulkey reminds that the linkage of the local education system with the local economic system is becoming more and more pronounced.[3] This linkage makes it incumbent on those of us in the knowledge, production, and transformation profession to be ready to assist practitioners to understand and apply correctly the techniques of cost analysis.

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[2] See, for example, School Closures and Policy Issues, Richard R. Valencia, October 1984, pages 5-6; Education in a Changing Rural Environment: The Impact of Population and Educational Change on the Demand for and Cost of Public Education in Rural America, B. Deaton and K. McNamara, 1984; "Efficiency and the Characteristics of School Districts: A Study of 178 Kentucky Districts," Craig Howley, 1989, pages 33-43; "Economies of Scale in Schooling," L. Kenny, 1982, pages 1-24; and "Expenditure and Size Efficiencies of Public School Districts," H. Walberg and W. Fowler, 1987, pages 5-13.

[3] See Research Needs in Rural Education: An Economic Perspective, David Mulkey, October 1988, page 10.

This need for technical assistance will increase in the next decade as more and more decisionmaking responsibility and authority are delegated to local school sites and boards. The current revolutionary change in the organization of public education in the Commonwealth of Kentucky is a case in point. There, the legislature has responded to the State Supreme Court's finding that Kentucky's education system is unconstitutional by giving authority and responsibility for the accomplishment of the "Six Goals for the Schools of the Commonwealth" to local school councils composed of the principal, three teachers, and two parents. The councils will determine curriculum; assign staff time; assign students and determine school schedules; allocate school space; plan and resolve school issues; and plan and implement school discipline, classroom management techniques, and extracurricular activities.[4] Clearly, then, the need for technical assistance in decisionmaking strategies, including cost analysis, is apparent and urgent.

Background on Cost Analysis in Current Education Literature

A search of ERIC system entries for 1980-90 using the descriptors cost effectiveness, measures, and measurement techniques yielded 65 entries. Most of the articles were single-topic studies reporting the results of cost analysis of energy-saving programs, vocational education, experiential learning, bus scheduling, student grants, year-round schools, and even online ERIC searches. A few were on new cost analysis measures or techniques. However, the two documents that seem to provide the best information for this paper are the texts by William N. Dunn (1981) and Henry M. Levin (1983).

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[4] See Elements of the Kentucky School Reform Package for Training Teachers and Administrators, Roger Pankratz, page 2.

Levin refers to his text as a "primer to introduce to the active administrator and evaluator the rationale and method of cost analysis." He defines cost analysis in educational evaluation as "the use of a broad set of techniques for evaluation and decisionmaking, including cost effectiveness, cost benefit, cost utility, and cost feasibility." Next, Levin defines each of the included techniques. Cost effectiveness analysis is evaluating alternatives according to their cost (input) and their effects in producing intended outcomes (output). It is the preferred approach, says the author, for most education-related studies. Cost benefit analysis is evaluating alternatives according to a comparison of both their costs and benefits where each is measured in terms of monetary value. Cost utility analysis is the evaluation of alternatives according to a comparison of their costs and the estimated utility or value of their outcomes. Cost feasibility analysis is the evaluation of alternatives based solely on cost and available funds.[5]

Dunn's text is a comprehensive introduction to public policy analysis. Chapter seven, "Recommending Policy Actions," contains an extensive discussion of "two major approaches to recommendation: cost benefit analysis and cost effectiveness analysis." Dunn's definitions of the two analyses are very similar to Levin's. However, Dunn is less sanguine than Levin about the universal applicability of these analyses to considerations of public policy. He prefers to view these two analyses as methods for assessing the adequacy of various alternatives and adequacy as one of six decision criteria, i.e., "stated values that underlie recommendations for action."

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[5] For a complete discussion of these four techniques, see Cost Effectiveness: A Primer, Henry M. Levin, 1983, pages 9-31.

The six Dunn decision criteria are: effectiveness, efficiency, adequacy, equity, responsiveness, and appropriateness. An alternative is effective if it results in a valued outcome or objective; efficient if it requires less effort to produce a given level of effectiveness; adequate if at any given level of effectiveness it satisfies the needs, values, and opportunities that gave rise to the problem; equitable if the effects or efforts are fairly or justly distributed; responsive if it satisfies the needs, preferences, or values of particular groups; and appropriate if its objectives are worthy or valuable and if the assumptions underlying the objectives are tenable.

Further, Dunn says, the criterion of adequacy may refer to four types of problems and, concomitantly, four variations of cost analysis: Type I problems have fixed costs and variable effectiveness and require equal cost analysis to ascertain which alternative maximizes the attainment of objectives; Type II problems have fixed effectiveness and variable costs and require equal effectiveness analysis to ascertain which alternative minimizes cost while achieving a fixed level of effectiveness; Type III problems have variable costs and variable effectiveness and require variable cost-variable effectiveness analysis to ascertain which alternative maximizes the ratio of effectiveness to costs; and Type IV problems have fixed costs and fixed effectiveness and require equal cost-equal effectiveness analysis to ascertain which alternatives, if any, meet a predetermined effectiveness level without exceeding a predetermined cost constraint.[6]

An overview of the Rural Initiative program follows. Then the applicability of Dunn and Levin's texts to the development and evaluation of the program is discussed.

Background on the Rural Initiative Program

In May 1987, the United States Department of Education invited the nine Regional Educational Laboratories to submit proposals to conduct projects that would address specific rural education problems within their respective Regions. This solicitation was authorized in the Education Appropriation Act of 1986 (H.R. 5233, as referenced in H. J. Res. 738; Public Law 99-500 and 99-591, October 30, 1986). Approximately $4 million was appropriated by Congress to fund the initiative in FY 87. A second $4 million appropriation continued the initiative in FY 88. In FY 89, Congress appropriated $5 million for the program.

The Conference Committee Report for H.R. 5233 explained that Rural Initiative funds were..."for the purpose of initiating a new program that will identify and support further development of promising rural small school activities and practices within [the Regional Educational Laboratories'] regions."[7] This initiative was one of many congressional efforts to assist rural communities to address the negative social impact of various economic, social, and political developments that now face them. Some of these developments are changes in the world economy, industrial restructuring in rural regions (especially the extractive industries), outmigration, loss of the family farms, weakening political base, and changes in family patterns.[8]

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[6] For a complete discussion of these ideas, see Public Policy Analysis: An Introduction, William N. Dunn, pages 219-277.

[7] Cited from the appendix to the OERI Rural Initiative Change Order Modification #8, May 13, 1987.

> Since there are only a few avenues for the Federal Government to become rapidly involved in noncategorical school improvement activities, and since Congress was interested in moving quickly to help rural regions experiencing immediate crises, it was decided to disburse the dollars earmarked for rural school improvement through the nation's nine already existing Regional Educational Laboratories. These nine Labs are strategically located throughout the United States and are funded and monitored by the Office of Educational Research and Improvement (OERI) of the United States Department of Education.[9]

OERI established a set of priorities for the Laboratories to address in their "core" Rural Initiative proposals. Through the core proposals, approximately two-thirds of the FY 87 funds were dispensed in equal shares to the Laboratories. A separate, limited competition among the Laboratories was held to dispense the remaining one-third of the funds. (A similar strategy--core and competitive proposals--was used in the FY 89 Rural Initiative, as well.) The priorities for the core proposal were based on prior OERI-sponsored rural education studies and symposia, a nationwide study by the Labs of the needs of rural schools, and other reports resulting from the collaborative rural education projects carried out by the Laboratories during 1986 and 1987. The list of priorities follows:

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[8] For descriptions of these and other developments, see The Changing Context of Education in a Rural Setting, E. Robert Stephens, 1988.

[9] Alan DeYoung's Qualitative Evaluations of Four Iterations of the AEL School-Community Partnership Model (draft), 1990, page 1.

1. Providing a full range of course offerings for students in rural, small schools.
2. Strengthening rural students' thinking and reasoning skills.
3. Improving achievement levels of rural poor students.
4. Improving student transition from rural schools to work and postsecondary education.
5. Recruiting and training quality teachers for rural schools.
6. Strengthening partnerships between rural schools and the community.
7. Assisting rural schools to organize for school improvement.

OERI directed the Laboratories to address these priorities through a series of five tasks:

1. Identify, gather, and disseminate information about promising rural practices, resources, organizations, and capacities.
2. Establish or strengthen working relationships with rural copartners.
3. Design and provide services to rural, small schools and to teachers, administrators, and others who work in rural settings.
4. Prepare a status report on the condition of education in rural, small schools within the Region.
5. Evaluate and report quarterly on progress in carrying out the work.

As indicated earlier, there was a limited competition for one-third of the FY 87 funds. The competition among the nine Laboratories was for proposals to address the most critical and persistent problems and needs of a Laboratory's Region that could not be addressed through the core proposal; permit resources to be concentrated on studying an especially promising approach to improving rural education; and to respond to unique, one-time opportunities that are available due to fortuitous timing, constituent interests, and staff capabilities. Appropriations by Congress in FY 88 and 89 enabled the Labs to continue and expand upon these FY 87 rural initiatives.

The core and the competitive proposals produced both unique and common projects across the nine Laboratories. Among the unique projects, the Southwest Educational Development Laboratory (SEDL) is working to improve staff development practices for rural educators in collaboration with state education agencies, institutions of higher education, and other intermediate units. In 1987-89, SEDL recruited and trained 100 staff development providers, 35 of whom worked with 30 demonstration sites in SEDL's five-state Region. The Far West Laboratory for Educational Research and Development's portfolio is diversified to include a teleteaching project in Utah's Great Basin, a K-3 literacy project in Arizona, and a project to improve Chapter 1 programs for rural California students. The Mid-Continent Regional Educational Laboratory operates a project designed to increase student access to information about postsecondary education, a project to enable rural schools to collaborate in using the expanded course offerings available through satellite and fiber optics technologies, and a project focusing on school-based entrepreneurship and community history documentation efforts such as those pioneered by Elliot Wigginton. The Appalachia Educational Laboratory is developing and pilot testing at four sites a capacity-building process aimed at improving the quality of information available to rural school officials concerning improvements needed in their schools. The pilot test includes a third-party case study at each of the four sites.

In addition to these unique R & D, technical assistance, and evaluation projects, the Labs worked also on common projects as part of the rural initiative. The common projects are tasks 1, 2, and 4 above: promulgating promising practices that work in the Region's rural schools, strengthening relationships with rural copartners, and collaborating with OERI on the production of a status report on rural education. Each of these efforts was adapted, of course, to the special characteristics and needs of the Laboratory Regions.

As a concluding note to this section, it appears that the Regional Laboratory contractors will have the opportunity to build upon the work of this heretofore incrementally funded Rural Initiative program. The RFP for operating Regional Educational Laboratories during FY 91-95 specifies that the contractors will devote at least 25 percent of their Laboratory resources to assisting in the improvement of rural, small schools.[10]

Cost Analysis Applied to the Rural Initiative Program

The Rural Initiative program is in the second quarter of its third year of incremental funding. This section of the paper discusses cost analysis procedures (as described in Dunn [1981] and Levin [1983]) that Congress, OERI, and the Regional Lab contractors have likely applied either explicitly or implicitly in conceptualizing, designing, developing, operating, and evaluating the program. The paper concludes with a discussion of some types of unanticipated program outcomes that should be investigated, cataloged, and considered in summative cost analyses of the program.

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[10] See Regional Educational Laboratory Request for Proposal, Office of Educational Research and Improvement, April 6, 1990.

When Congress conceptualized the Rural Initiative program, it was dealing with Dunn's Type I problem (fixed cost and variable effectiveness) and probably utilized a variant of Levin's cost feasibility analysis. There was $4 million available to assist rural schools. More than likely, Congress addressed itself to two Type I questions: (1) how can Congress disburse those resources in a timely manner that would produce measurable effects on the nation's 2,750 rural school districts and 2.2 million children[11]; and (2) what priorities should Congress stipulate to assure that significant education problems would be addressed? Answers to these queries were provided in the report language attached to the appropriation bill.

Next, as the agency designated by the Department of Education to administer the program, OERI designed the program and prepared the two solicitations for the Labs. OERI was dealing with Dunn's Type I problem and using a variant of Levin's cost effectiveness analysis. It is likely, then, that the agency grappled with the following kind of Type I question: How can OERI design a program that respects the intent of Congress, as well as the prerogatives of the Laboratories' regional governing boards, while assuring accountability and achieving the greatest effects on rural schools?

In developing programs responsive to the OERI solicitations, board members and staff of the corporations operating the Laboratories were confronted with Dunn's Type I problem for the development of the core proposal and with a Type III problem (variable cost-variable effectiveness) for the competitive proposal. Variants of Levin's cost effectiveness analysis were probably used to develop first the core and then the competitive proposals. The key Type I and Type III questions likely addressed by the individual Laboratories were: What basic program design will fulfill OERI requirements and at the same time address significant needs of the rural and small schools in this Region? What does the Lab's experience in the Region suggest would be the preferred program strategies for addressing the needs within the resource constraints of this initiative?

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[11] The data are from the Northwest Regional Educational Laboratory publications cited in The End of the Road: Rural America's Poor Students and Poor Schools, National Rural Small Schools Task Force, 1988.

In operating and formatively evaluating the programs for almost two and a half years, the Laboratories have addressed annually Type I and Type III problems as they prepared their continuation proposals. Cost effectiveness analysis was probably used in some form to prepare the proposals. The key Type I question addressed by the Labs was: What program adjustments are necessary in order to improve the effectiveness and efficiency of the program? The key Type III question was: What supplemental activity(ies) in accord with the solicitation, would complement work being carried out under the core project and address needs of rural small schools in the Region?

Finally, in carrying out a summative evaluation of the Rural Initiative program at some future time, the Laboratories and OERI will probably use some variant of cost effectiveness. The problem of evaluating each of the nine Lab's Rural Initiative programs is a Type III problem in each instance. In approaching this summative evaluation task, care should be taken to document both the intended and unintended effects of the program.

Dunn is especially persuasive on this point. Dunn uses a classification system as a net to capture as many benefits as possible. He includes benefits that are internal or external to the given target group or jurisdiction; tangible and intangible; direct and indirect results of the program; net efficiency and redistributed benefits (pages 246-247).

As the third year of the Rural Initiative program proceeds, it is appropriate to begin documenting unanticipated effects of the program so that they can be classified for possible inclusion in future cost effectiveness studies. A beginning list of such effects follows:

- empowerment of rural educators involved in the Laboratories' Rural Initiative programs through recognition among colleagues in their states, through networking with rural educators from other states, and through attendance at special regional meetings;
- development of new rural organizations such as the Coalition of Rural West Virginians (formerly the Special Task Force on Rural School Districts) that produced the report Schools in Crisis: Students at Risk that led to (1) a modification in the state formula for service personnel favorable to rural schools, and (2) a state appropriation of $20,000 for a study of the characteristics of effective rural high schools;
- increased institutional capacity of the Regional Educational Laboratories to help address the regional needs of rural schools through R & D-based initiatives;
- development of a national network of education R & D professionals knowledgable of and interested in the improvement of rural schools;
- strengthening of professional associations for educators interested in rural, small schools such as the National Rural Education Association, the Southern Rural Education Association, the Rural Education Special Interest Group of the American Educational Research Association, and the DC-based Organizations Concerned About Rural Education;
- new publications such as the paper by E. Robert Stephens that received the 1989 National Rural Education Association Research Award (The Changing Context of Education in a Rural Setting) and (Education and Rural Community Development: An Environment for Change) by the members of the AEL Rural, Small Schools Regional Rural Roundtable;

- heightened interest in rural education in the Office of Educational Research and Improvement evidenced by the hiring of a fulltime senior level coordinator for rural education with the concomitant revitalization of the Rural Education Subcommittee of the Federal Interagency Committee on Education;

- increased collaboration between the Regional Laboratory contractors and the ERIC Clearinghouse on Rural Education and Small Schools leading to increased awareness of clearinghouse services and products among rural educators participating in the Rural Initiative program;

- at the national level, too, new rural education organizations are appearing with increasing frequency--the entries in the Directory of Organizations and Programs in Rural Education increased in the last three years by 400 percent, according to its ERIC/CRESS compilers; and

- increased research productivity in rural education as evidenced by a 15-20 percent increase in input to ERIC/CRESS in the last three years, e.g., journal article input was 326 in 1986, 510 in 1989.

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Efficiency and Economies–of–Scale Revisited: Implications for Financing Rural School Districts

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INTRODUCTION

BETWEEN 1930 and 1980 the number of school districts in the United States decreased 88 percent, from 128,000 to 15,900. In large part these reductions were the result of aggressive state policies that provided incentives or mandates for school district consolidation reflecting the thinking that "bigger is better." Large schools and districts were thought to be more "efficient" because they achieved greater economies of scale by educating a larger number of students at lower costs than did small schools and school districts.

This thinking is changing. Policymakers, educators, and others are beginning to question the effectiveness of ever growing school districts—such as those in Chicago, Boston, and Los Angeles—with their often impersonal atmosphere, high dropout rates and other attendant problems. In many cases they are finding that the cost of the provision of schooling per pupil is only one piece of the efficiency puzzle; additional considerations include what revenues buy in terms of increased learning, lower dropout rates, increased participation in school events, and positive attitudes towards education. When these and other relevant factors are taken into account, questions are being raised concerning whether the old adage "bigger is better" is the appropriate bottom line for schooling in the 1990s. Instead, in an era that focuses on "results in education," efficiency in schooling may be better encapsulated by the expression "small is beautiful." The conceptual shift from large to small schools and districts as a basis for achieving greater efficiency in schooling is driven by a growing body of research that focuses not only on the costs of schooling, but what these dollars buy (c.f., James & Levin, 1970; Haller & Monk, 1988;

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Hawkins, 1985; Walberg & Fowler, 1987). These studies show that small schools and districts may be a more efficient investment than large schools and districts because the learning value per unit of expenditure is generally higher in small rather than large schools and districts.

This article will briefly review research on the association between school size and educational outcomes. Implications for financing rural schools and districts are then discussed.

SCHOOL SIZE AND ACHIEVEMENT

In a 1981 synthesis of thirty research studies on school district size, James Fox observed "most questions related to size are concerned with the potential cost savings associated with educating different numbers of pupils" (p. 281). However, he observed, costs related to the "number of students does not provide information on the quality of education" (p. 281). In fact, early studies that investigated the association between the quality of education and school or district size as reviewed by James and Levin, (1970) found that quality (test scores) diminished with increased quantity (student enrollments).

In a more recent research related to school size and school quality, Butler and Monk (1985) concur with the early findings in this area. "The analysis of scale economies enjoyed by larger districts can come at the expense of the efficient production of educational outcomes . . ." they noted. "Empirical evidence from New York State is presented which shows that lower levels of efficiency exist in large as compared to small districts" (p. 3, in Walberg & Fowler, 1987). Likewise, Walberg & Fowler (1987), summarizing several recent studies on the relationship of district size and student achievement (i.e., Butler & Monk, 1985; Bidwell & Kasarda, 1975; Fox, 1981; Guthrie, 1979; Turner, Camilli, Kroc, & Hoover, 1986), noted the growing evidence that large school districts usually achieve less efficiently (see also, Hawkins, 1985). "Research on the district size . . . is at best equivocal," they state, "and much of it suggests that bigger districts yield low achievement, and poor student, parent, and staff morale" (p. 8).

Utilizing data from New Jersey to compare the effects of school district size and achievement, Walberg and Fowler found, in "all cases, larger district enrollments are associated with lower test scores" (p. 12). They conclude that the study "results contradict the hypothesis sometimes put forward that large districts are efficient" (p. 12) and point to the unintended results of state policy over the last century that has encouraged wide-scale school district consolidation:

> These striking trends confirm other recent studies of district size and suggest that the policy of district consolidation undertaken by states in this century may have hurt rather than helped learning since they suggest diseconomies rather than economies of scale. The same trend might also be found for the size of schools, and this possibility certainly deserves more systematic research (p. 12).

In *The Good School*, John Goodlad (1983) finds small schools yielded the highest outputs in the sample investigated: "Most of the schools clustering in the top group of our sample in major characteristics were small," he writes (p. 309), drawing the following implications: "Surely any arguments for larger size based on administrative considerations are far outweighed by educational ones against large schools" (p. 309). However, he observes, current practice generally does not reflect the research:

> Conant suggested that a high school with 100 graduating seniors would be sufficiently large to facilitate his recommended curriculum. Some school boards and superintendents concluded, apparently, that more would be better and pushed for school consolidation, usually accompanied by curricular expansion, the availability of more alternatives, and the teaching and course resources necessary to tracking. I have difficulty arguing the virtue of any of these, given our data. . . . (p. 310).

In summary Goodlad states: "It is not impossible to have a good large school; it simply is more difficult" (p. 309). "Admittedly, the low student–teacher ratio required to provide [the small high schools] surprisingly rich curriculum is costly, but substantial costs would be incurred through consolidation" (p. 310).

COSTS AND SMALL SCHOOLS AND SCHOOL DISTRICTS

According to Fox (1981), in a review of thirty research studies on school district size, costs are generally higher in small schools and districts; "diseconomies" also occur for large size schools. Districts with less than 300 students spend more per student according to other researchers (Walberg & Fowler, 1987), due to the higher fixed costs per pupil necessary to mount a basic educational program. Fixed costs include the provision of a critical mass of educational programs and services, facilities, administrative, support and instructional staff, equipment, overhead, and transportation.

This raises a dilemma for policymakers, state education officials, and others. If the cost of providing an educational program is higher for small schools and districts, then all else being equal, they will be less able to provide an equal educational opportunity for their students. These districts have two choices: they must either spend more out of local revenues to provide the resources necessary to offer basic educational program to their students or they must be satisfied with more limited educational offerings (Monk, 1982). However, for many poor rural school districts that do not have the ability to raise additional local revenue to support a basic or minimum educational program, fiscal freewill is a cruel illusion, as Justice Thurgood Marshall noted in the landmark *Rodriguez* case. If these rural schools and districts are to provide equal educational opportunities for all students, state finance systems must provide them additional support to compensate for the elevated costs of providing a minimum education. If states do not provide additional revenues to poor rural areas, then the quality of a child's education will become dependent upon where that child lives. This is in contrast to the long held and widely espoused American ideal which affirms the availability of an equal educational opportunity for sectors of the educational landscape.

STATE SUPPORT FOR RURAL SCHOOLS AND DISTRICTS

Do states provide additional support for rural and small schools? If so, on what basis is this support distributed? According to research conducted by Bass (1988) that examined the extent to which states provided supplemental funding to small or isolated school districts to compensate their associated higher costs of operation, 50 percent (24) of all states reported allocating additional revenue beyond the average per pupil guarantee to rural areas based on a combination of size and isolation factors. Thirty–three percent (16 states) reported providing additional transportation allotments based on a sparsity factor. Eighteen percent of the states (9) reported providing extra funds for planning or for cooperative school programs. Bass concludes his study by calling for additional research in this area:

> For future research, there appears to be a need to more accurately describe the various mechanisms for funding small schools, to analyze the impact of existing aid distribution systems, and to identify alternative funding sources or mechanisms that are not currently being employed. (1988)

This paper will briefly review overall provisions of state aid systems that form the basis for additional state allotments to rural and small schools and districts. It will then more accurately describe the various mechanisms states are using to fund small schools and school districts.

The data utilized to describe state aid systems and financing mechanisms states are using to fund small schools and districts were collected during the 1989–90 school year from each state's chief state education finance officer on behalf of the Education Commission of the States (ECS) (Verstegen, 1990). All but six states responded (Alabama, Hawaii, Louisiana, North Carolina, Oklahoma, and Vermont). For the states that did not respond, data were included from the 1987–88 ECS survey (Verstegen, 1988).

STATE AID SYSTEMS

An examination of the data shows that in 1989–90 there was a bifurcated system of education finance in the United States. The systemic prongs of financing arrangements across the fifty states were distinguishable through inherent differences in the manner in which equity was conceptualized and operationalized into the particular distribution scheme. Systems of finance in the United States can be classified into those which, on the one hand, seek to equalize funds between and among students in an effort to guarantee pupil equity; and on the other, those which provide equal access to revenues in an effort to provide taxpayer equity. Some states attempt to accommodate both approaches to equity by including both objectives into their financing scheme through two–tiered systems. For example, one tier of the financing plan is dedicated to pupil equity, and the second to taxpayer equity. When a two–tiered approach is taken, however, the first tier usually receives the major financing emphasis.

In the Appalachia area, three states—Tennessee, Virginia, and West Virginia—use a pupil equity scheme to distribute state revenue to localities. One state, Kentucky, uses a tiered approach, with a pupil equity scheme as the first tier, and a taxpayer equity plan as the second tier.

Fund Equalizers. Today, thirty–three states—by and large the majority—are utilizing pupil equalizing financing schemes by providing revenue to localities through foundation programs. The objective of this scheme is to provide equal treatment of equals in education support. This is referred to as horizontal equity. Inherent in the concept of horizontal equity is that each pupil receives equal resources that provide support for a basic, i.e., foundation, educational program.

An assumption built into the foundation program is that components of a basic education can be determined and costed out.

Revenue is then provided to support the cost of the basic education on an equal basis to the beneficiaries of the plan—our nation's children. A continuing issue in this regard, however, is "What *is* education." Until this is clear, fairness issues regarding the cost of education remain debatable. Even when states have undertaken to define education through accreditation schemes and/or legislatively promulgated standards, the determination of the cost of providing the education program across localities can be contentious. In this study it is also recognized that issues of adequacy undergird equity considerations.

Thus, the equity of a state financing program begins with the adequacy of the foundation guarantee. That is, if the basic funding for education is not enough to cover the costs of the minimum (or quality) education program then more affluent districts will easily raise those funds and more with minimal effort, whereas poorer districts will not even be able to provide a minimum education for their children (see also, Honeyman, Thompson, and Wood, 1989). Large disparities in program offerings will, no doubt, lead to great variations in life chances. Thus, inadequate support breeds unjust social and fiscal policy.

It is not surprising, therefore, that to date, states have focused on developing more precise estimates of the costs of various "basic" educational programs and services. Much of the interest in obtaining more precise cost data stems from a concern with providing adequate resources to schools. For instance, Alaska, Illinois, and Connecticut have used sophisticated "resource cost models" to predict differences in the cost of serving special student populations in different settings, e.g., rural, urban; large, small. Other states, e.g., Texas and Missouri, have generated education cost indices to determine the variance in the purchasing power of the dollar across the state. Still other states seek to determine actual cost differences for programs for special versus regular populations, or for rural versus urban areas, and to provide supplemental revenue to compensate for differences in basic program costs.

Of those states using the foundation approach for the apportionment of state–local revenues, twenty–five states provide a foundation guarantee based on a pupil unit (in average daily attendance or average daily membership), and eight states provide a guarantee based on instructional units (defined according to the number of students needed to support one classroom teacher together with indirect costs). Generally, an adequately funded or high–level foundation program that distributes funding on a classroom unit basis best meets the needs of small rural and poor school districts. Classroom unit distribution mechanisms that provide funding for teachers based on a target number of students *or less* per classroom (if based on uncontrollable district factors) are optimal.

Resource Equalizers. While fund equalization formulates one prong of the bifurcated system of financing in the United States of America, the other prong is based on an equalization of the ability of a locality to provide resources for education. State finance systems that reflect a resource equalization approach to equity allow school districts to determine how much education they desire, and how much they are willing to spend to reach their education goals, normally within prescribed limits, e.g., floors and ceilings. The state then provides the difference between what the district can generate from its own resources and some set of state guarantees, generally based on a (linear) schedule. Under these plans education funding guarantees per pupil vary throughout the state. Currently only about six states have based their financing systems solely on these assumptions. New York and Rhode Island, although they conceptually fall into a resource equalizer category, set a fixed guarantee on spending at the state level. It could be argued that they would, therefore, be considered fund equalizers. This is because the major variable in resource equalizers is the ability of the locality, not the state, to set the amount of shared state–local costs, through a sliding tax effort. If these two states are discounted, then a meager four states use district power equalizing schemes.

Because resource equalizing schemes allow districts to have variable intrastate spending per pupil, an issue related to these plans would be whether the resulting interstate revenue disparities are justifiable and if less affluent districts have an equal opportunity to raise additional funds for schools compared to their more affluent counterparts. Some researchers have argued that for poor, rural districts, with meager ability to pay for education, fiscal freewill is a cruel illusion (Verstegen, 1990). The inability to raise funds due to a depressed tax base or lower disposable incomes that pay for taxes, hobbles them in their "opportunity" to provide quality education for all children. If this is so, then district power equalizing financing schemes are the least desirable for poor localities, whether rural or urban.

Combination Approaches. A number of states have attempted to accommodate the bifurcated education financing arrangements across the United States of America by incorporating both of the two major goals driving financing systems into their distribution scheme.

Nine states use a two–tiered approach in their financing plans. These systems attempt to accommodate both fund and resource equalization goals. For example, Kentucky, Oklahoma, and Utah have combined foundation programs with district power equalizing schemes; Pennsylvania and Massachusetts have joined a foundation program with a percentage equalization scheme.

The same arguments can be made for each of the separate tiers of these financing schemes on behalf of poor, rural schools, as have been previously offered. A benefit of these plans, however, is that they are inclusive—that is, all funding flows through the formula. This tempers the disequalizing effect of revenue raised outside the financing scheme, which is allowable in most states under foundation plans.

Full State Funding. One state, Hawaii, provides full state funding of education. This approach of both resource and fund equalization, combines the two prongs of the United States of America financing system. However, local control is likely constrained under this approach as the state determines the full cost and resources available for education. Thus, the realization of equity likely restricts the ability of localities to provide additional revenue for education beyond the state financing program a factor that has been linked with decreased local control or liberty.

Weighted Systems. Inherent in the conception of fairness that undergirds state financing programs is the concept of vertical equity. It is the principle that implies absolutely equal dollars across localities are not required nor always desirable if equity is to be achieved. Additional compensation by the state for additional student and district needs is considered equitable if these funds are based on justifiable and relevant differences in circumstances that affect reaching a basic or minimum education, according to this criterion. The principle of vertical equity therefore, calls for unequal treatment of unequals. Legitimate differences in funding for pupils or districts may result from e.g., diseconomies of scale, special needs students—handicapped, bilingual, compensatory education, vocational education—declining enrollments or growth in enrollments, or variations in the purchasing power of the dollar. According to the data collected from the ECS survey, additional state education revenue beyond the basic state guarantee has been allocated to localities based on the following factors: density/sparsity of schools; declining enrollment or growth; capital outlay and/or debt service; transportation; special education; compensatory education; bilingual education; gifted and talented education; and grade level differences.

The manner in which vertical equity considerations have been operationalized into financing schemes across the United States varies. These differences are taken into account in a majority of states through pupil weighting systems. Other methods to compensate for additional costs include flat grants, classroom unit systems, and excess costs/percentage reimbursement schedules (for a description, see Guthrie, Garms & Pierce, 1988; Webb, McCarthy & Thomas, 1988). These mechanisms distribute supplemental support to localities when student or district needs justify additional resources to provide equivalent services or programs.

In general, financing systems that base additional allocations to school districts on a per–pupil amount of revenue either through flat grants or categorical aid are the least beneficial to small schools or small school districts, as these schemes usually generate an insufficient amount of revenue, e.g., to mount a program, or hire a teacher. A necessary corrective is to provide a total minimum amount of funding (a floor) that would fund a program, support the necessary instructional personnel and cover other minimum costs. In this regard, percentage reimbursement funding schemes could provide for excess costs and meet the needs of small and rural school districts if they were based on overall programmatic needs. However, the fact that these are "reimbursements" creates difficulties for poor districts with meager local revenue capacity. Considering each of the mechanisms available to finance vertical equity considerations, however, there are trade-offs. The wide diversity present in rural school districts militates against a "one size fits all" philosophy as related to state aid mechanisms for supplemental allocations as illustrated below. Many states do provide additional funding guarantees to small, sparse or rural school districts to compensate for diseconomies of scale through factors designed specifically for this purpose. As one researcher has noted, these areas not only have "to keep up, they have to catch up" on many years of underfunding that preceded the current period. This suggests that the sensibility of the state aid system to both the adequacy and compensatory ability of the supplemental revenue are crucial factor in determining its effectiveness in addressing the additional revenue requirements of rural and small schools and districts.

PROVISIONS

As related to supplements for rural/small schools and districts, the survey data showed that in 1989–90, thirty (60 percent) states recognized the higher cost of providing a basic education in rural/small districts by providing factors in their school finance formula to allot additional revenue to these areas. This is not surprising as nearly all states have a substantial portion of their public school

TABLE 1

	LARGE CITY	MID-SIZE CITY	URBAN FRINGE LARGE CITY	URBAN FRINGE MID-SIZE CITY	LARGE TOWN	SMALL TOWN	RURAL
				STUDENTS			
U.S. AVERAGE							
Number	5347256	6733324	6702726	4802864	977782	8810507	6539879
Percent	(13.4%)	(16.8%)	(16.8%)	(12.03%)	(2.5%)	(22.07%)	(16.4%)
APPALACHIA							
Kentucky							
Number	0	109641	0	92751	34970	203126	202265
Percent	(0.00%)	(17.06%)*	(0.00%)	(14.4%)*	(5.44%)*	(31.6%)*	(31.47%)*
Tennessee							
Number	177503	93385	50065	89468	34213	217963	161623
Percent	(21.5%)*	(11.33%)	(6.07%)	(10.9%)	(4.15%)*	(26.44%)*	(19.61%)*
Virginia							
Number	0	291035	179294	114825	3377	145978	244908
Percent	(0.00%)	(29.7%)*	(18.3%)*	(11.7%)	(0.34%)	(14.9%)	(25%)*
West Virginia							
Number	0	48006	0	47205	9315	97870	155599
Percent	(0.00%)	(13.4%)	(0.00%)	(13.19%)*	(2.6%)*	(27.34%)*	(43.5%)*
				SCHOOLS			
U.S. AVERAGE							
Number	6997	11092	10696	7701	1828	18659	22319
Percent	(9%)	(14%)	(13%)	(10%)	(2%)	(23%)	(28%)

APPALACHIA							
Kentucky							
Number	0	197	0	179	64	406	553
Percent	(0.00%)	(14.08%)	(0.00%)	(12.79%)*	(4.57%)*	(29.02%)*	(39.53%)*
Tennessee							
Number	278	194	68	156	55	419	409
Percent	(17.61%)*	(12.29%)	(4.31%)	(9.88%)	(3.48%)*	(26.54%)*	(25.90%)
Virginia							
Number	0	455	254	179	6	282	585
Percent	(0.00%)	(25.84%)*	(14.42%)*	(10.16%)	(.034%)	(16.01%)	(33.22%)*
West Virginia							
Number	0	132	0	131	34	243	544
Percent	(0.00%)	(12.18%)	(0.00%)	(12.08%)*	(3.14%)*	(22.42%)*	(50.18%)*

Data source: Johnson, F. (1989), Assigning Type of Locale Codes to the 1987–88 CCD Public School Universe: (No. SP–CCD–87/88 –7.4). Washington, D.C.: Department of Education, OERI.

*Denotes a state average that is higher than the U.S. average.

students attending small town and rural schools.[1] Twenty–three states have 50 percent or more of their students in these categories. Thirty–seven states have more than one–third of their students attending schools in these localities (Johnson, 1989).

West Virginia, Kentucky, Virginia and Tennessee have more students in rural schools than the United States average. Forty–four percent (149,987) of all students attend rural schools in West Virginia, 32 percent (202,111) in Kentucky, 25 percent (244,535) in Virginia, and 20 percent (161,361) in Tennessee. These states also have between 25 percent and 50 percent of elementary and secondary public schools located in rural areas. These data are shown in Table 1. Given the large number of students attending rural schools in the Appalachian Region, it is surprising that only one state (Virginia) provided additional revenue in its finance system for small schools or districts in 1989–90.

Of those states with provisions in their funding formulas for additional revenue for small/sparse districts, ten states (20 percent), reported distributing funding based on school or district size, and six states (12 percent) reported providing aid for sparsely populated or isolated districts. There are nine states (18 percent) that award aid based on a combination of size and isolation of the school/district, according to the data. Size, sparsity, and tax effort are used in combination in two states (4 percent); three states (6 percent) provide funding based on "other" characteristics. These factors are arrayed by state in Table 2 and discussed more fully below.

Small Schools Factors. Ten states distribute funding based on school or district size. When school size is utilized to allocate funding, states typically specify "cut–offs" or "target" sizes that define eligibility. To be eligible for assistance, four states—Colorado, Kansas, Ohio, and Oklahoma—provide aid based on overall school *district* size. In Oklahoma, funding is awarded to school districts with less than 500 students. Colorado, under its new aid system, assigns instructional unit funding ratios to eight district categories that are based on size. For rural areas, $65,518 is earned for each 12.8, pupils in addition to $58 per pupil for instructional purchased services. Small Attendance area classifications earn $49,468 for each seven pupils, in addition to $204 for instructional services. Ohio provides aid to three small Lake Erie districts.

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[1] The bureau of Census defines an area as rural unless it (1) consists of a central city and surrounding densely settled territory with a combined population of 50,000 or more inhabitants (2) is a place within an urbanized area or has 2,500 inhabitants and is outside an urban area. A rural area has less than 2,500 people or is designated by the U.S. Census bureau with a zip code designated rural.

TABLE 2

PROVISIONS IN STATE FUNDING FORMULAS FOR ADDITIONAL REVENUE FOR RURAL SCHOOL DISTRICTS

	No Factor	Small	Sparsity/ Isolated	Small & Isolated	Combination	Other
Alabama	X					
Alaska				X		
Arizona				X		
Arkansas					X	
California				X		
Colorado		X				
Connecticut	X					
Delaware	X					
Florida			X			
Georgia			X			
Hawaii						(NA)
Idaho			X			
Illinois	X					
Indiana	X					
Iowa						X
Kansas		X				
Kentucky	X					
Louisiana		X				
Maine				X		
Maryland	X					
Massachusetts	X					
Michigan	X					
Minnesota				X		
Mississippi	X					
Missouri						X
Montana		X				
Nebraska			X			
Nevada		X				
New Hampshire	X					
New Jersey	X					
New Mexico		X				
New York	X					
North Carolina			X			
North Dakota		X				
Ohio		X				
Oklahoma		X				
Oregon				X		
Pennsylvania					X	
Rhode Island	X					
South Carolina	X					
South Dakota						X
Tennessee	X					
Texas				X		
Utah				X		
Vermont	X					
Virginia		X				
Washington				X		
West Virginia			X			
Wisconsin	X					
Wyoming	X					
Total	19	10	6	9	2	3

Conversely, five states provide extra funding allotments to districts based on *school* size rather than district size. Louisiana provides aid to all schools with less than 438 pupils in the form of teacher allotments. Montana, Nevada, New Mexico, and North Dakota provide differential support levels to elementary, (junior high) and high schools based on student population. Montana provides a sliding scale of funds to elementary schools that have less than 300 students (average number belonging—ANB) or high schools with less than 600 students (ANB) where supplemental aid decreases as school size approaches these targets, and finally stops at 300/600 pupils.

New Mexico allots additional aid to school systems based on both school and district size factors. Districts with 4,000 total ADM or less receive supplementary funding. Also, elementary schools with less than 200 students and high schools with 200 or 400 students receive additional allotments. Table 3 shows state provisions for funding small schools/districts by state.

Sparsity Factors. Six states allot supplemental assistance to schools or districts based on a geographical isolation factor. These provisions are shown in Table 4.

Geographic isolation factors can be based on (1) the distance to the nearest school, (2) a specified maximum length of time students are required to ride the bus to school, (3) the population density, (4) the area of the district, and (5) a combination of the above factors and/or additional factors, e.g., tax effort, cooperative arrangements (Bass, 1980). Bass (1980, p. 14) finds that the use of geographical isolation factors to allocate supplemental assistance to small/rural areas have several advantages. They (1) do not entail high costs of providing aid to all students, (2) do not encourage continued operation of unnecessary small schools, (3) do not "force" consolidation disregarding local choice, but they (4) do recognize "necessary remote" districts and schools need additional revenue.

Six states allot supplemental assistance to schools or districts based solely on geographical isolation. These provisions are shown in Table 4. Of these, four states—Florida, Georgia, Nebraska, and West Virginia—provide funding to isolated school *districts*. Nebraska provides aid based on the number of persons per square mile to districts that qualify for equalization aid where the percentage of 10 percent, 20 percent, 30 percent, or 40 percent is added to the total basic need calculation for districts that have 4, 3, 2, or 1 person per square mile. West Virginia has a new provision in its finance formula to provide additional aid to districts based on both the sparsity of the population and bus miles driven. However, this provision was not funded in 1990.

TABLE 3
PROVISIONS IN STATE FUNDING FORMULAS FOR ADDITIONAL REVENUE BASED ON DISTRICT SIZE

STATE	SMALL SCHOOLS FACTORS
Colorado	One of the eight categories is for districts with enrollments of less than 150 funded pupils. One classroom unit is provided for each seven pupils, which is about half the 12.8 pupils of the next lowest category.
Kansas	To determine the general fund budget a higher budget per pupil is permitted in low enrollment districts.
Louisiana	Predetermined teacher allotments are made for schools with fewer than 438 students.
Montana	Elementary schools with fewer than 300 pupils and high schools with fewer than 600 pupils receive state aid based on a foundation program schedule that provides greater per pupil payments for smaller schools with per pupil payment decreasing as school size increases. Declining payment scale. Elementary schools with more than 300 pupils and high schools with more than 600 pupils receive a flat rate per student which is the lowest rate on the declining scale.
Nevada	Weightsd for small schools (and urban areas).
New Mexico	Schools with less than 200 elementary and junior high school pupils, districts with less than 200 or 400 senior high school pupils, districts with over 10,000 ADM but less than 4,000 ADM per high school, and districts with less than 4,000 total ADM, all qualify for additional aid.
N. Dakota	High schools with up to 550 pupils receive up to a 0.635 extra weighting per pupil; 1–teacher elementary schools receive a weighting of 1.29; small elementary schools are weighted between .925 and 1.045.
Ohio	Extra per pupil subsidy for three small Lake Erie Island school districts.
Oklahoma	School district size of 500 or less is weighted in the foundation formula.
Virginia	Additional revenue is provided to small districts as determined by the State Department of Education.

TABLE 4
PROVISIONS IN STATE FUNDING FORMULAS FOR ADDITIONAL REVENUE BASED ON GEOGRAPHICAL ISOLATION

STATE	SPARSITY FACTORS
Florida	Sparsely populated districts receive a supplement per FTE. Sparsity supplements are multiplied by the district cost differential.
Georgia	Sparsely populated areas are alloted additional funds.
Idaho	Remote and necessary schools may petition the state board of education for special funding consideration.
Nebraska	To districts that qualify for equalization aid, the percentage of 10%, 20%, 30%, or 40% is added to the total basic need calculation for districts that have 4, 3, 2, or 1 person per square mile, respectively.
N. Carolina	A special allotment is paid for isolated school populations.
W. Virginia	The state would provide additional service personnel for qualifying counties based on the sparsity of population and bus miles driven. This statute was not funded for its first year 1990.

Two states provide assistance to isolated school "populations"—North Carolina and Idaho. To receive aid, districts in Idaho must petition the state board for additional assistance.

Both Small and Geographical Isolation Factors. Nine states include provisions in their school finance formulas for supplemental state aid beyond the basic state guarantee based on a combination of school or district size *and* geographical isolation. Four of these states provide assistance based on school district size, four allocate funding based on small "necessary" schools, one state uses both school and district size targets. These provisions are shown by state in Table 5.

Small and isolated school *districts* receive additional support in Alaska, Arizona, Maine, and Texas. Texas uses two tiers of size criterion. Districts over 300 square miles, and with an average daily attendance (ADA) below 1,600, receive additional supplements, as do districts with less than 130 students in average daily attendance (ADA). The latter can use 130 as their ADA for funding purposes.

Small isolated schools drive additional revenue to school districts in California, Oregon, Utah, and Washington. In California, districts with less than 2,501 ADA and containing "necessary" small schools of less than 101 ADA for elementary and less than 301 for secondary, receive additional aid. In Minnesota, isolated districts with small (less than 140 pupils) elementary schools (K–6), or secondary schools (less than 400 in grades 7–12), receive additional funding. Elementary schools must be 20 or more miles from another elementary school. The amount of revenue for secondary school pupils varies as a function of the number of pupils, the distance to the nearest high school and the attendance area. The State of Washington provides assistance for "remote and necessary small schools" and for elementary schools with less than 100 pupils, and secondary schools with less than 300 pupils, depending on grade level and required pupil–staff ratios. Necessary "existent" small schools receive additional aid in Utah and in Oregon. In Oregon, elementary schools must be more than 10 miles from the nearest elementary school and high schools must be more than 15 miles from the nearest high school.

Size, Geographic Isolation, and Other Factors. Arkansas and Pennsylvania provide additional aid to small schools/districts based on three factors: size, isolation and tax effort. As a condition of receiving additional assistance in both of these states, school districts must have a tax effort at least equal to the statewide average millage rate. In Arkansas, schools must be less than 301 ADA; in Pennsylvania, two tiers of size are used as is a

TABLE 5
Provisions in State Funding Formulas for Additional Revenue Based on Both District Size and Geographical Isolation or on a Combination Icluding Tax Effort

STATE	COMBINATION OF FACTORS FOR BOTH SMALL & ISOLATED
Alaska	The formula is weighted in favor of small and isolated sites.
Arizona	Districts with less than 600 ADA are small and receive additional weights; if they are also isolated they receive additional weightings.
Arkansas	Small and isolated districts of 350 ADM or less are eligible to receive additional aid if their mill rates are equal to the average state millage charged on real property.
California	For necessary small schools (elementary schools with less than 101 ADA, high schools with less than 301 ADA, single high schools in unified districts, high schools exclusively for juvenile hall pupils or special education pupils) districts may elect to receive a statutorily prescribed dollar amount based on the number of ADA and the number of certified employees in lieu of regular funding. Districts must be less than 2501 ADA.
Maine	Grants are provided for geographically isolated districts and small administrative units.
Minnesota	Districts with secondary schools having fewer than 400 pupils in grades 7–12, or elementary schools having fewer than 140 pupils in K–6, located in isolated areas receive sparsity revenue in the general education formula. The amount of revenue for secondary pupils varies as a function of the number of pupils, the distance to the nearest high school, and the attendance area. The amount of revenue for elementary pupils varies as a function of the number of pupils enrolled in schools located 20 or more miles from the nearest elementary school.
Oregon	Approved necessary small schools of less than 100 students. Elementary schools must be more than 10 miles from the nearest elementary school. High schools must be more than 15 miles from nearest high school. Partially suspended for 1989–90.
Pennsylvania	Qualifying districts get percent of their instructional costs based on populations per square mile; 4,000 and below population, 1%; 4,000–5,949 population, 3%; 5,950 and above, 5%. Two exceptions: (1) districts with population per square mile of 5,950+ and student populations over 35,000 WADM get 19%; (2) qualifying districts with populations per square mile below 4,000 persons and are central cities of Standard Metropolitan Statistical Areas get 3%. To qualify a district must levy local taxes equal to or in excess of statewide median tax effort. Also, aid is provided to small districts with ADMs equal to or less than 1,500 and an aid ratio equal to or greater than .5000.
Texas	Basic allotment is increased by a percent proportional to the difference between a district's ADA and 1,600 ADA. Percent increase is greater for districts having over 300 square miles. Districts having below 130 ADA use a minimum ADA depending on actual ADA, grades taught, and the distance to nearest school.
Utah	Additional units are provided for necessary, existent, small schools below 165 elementary ADM, 389 junior high ADM, 417 high school ADM and 722 for six-year secondary school ADM.
Washington	For remote and necessary elementary schools and small elementary schools with less than 100 pupils and high schools with less than 300 pupils additional units are allocated depending on grade level and required pupil–staff ratios.

local wealth factor. Aid is provided to small, low wealth school districts with average daily membership (ADM) of 1,500 or below; and to school districts with populations of less than 4,000 per square mile.

Cooperative Arrangements. Unlike the data reported by Bass (1988), only one state reported additional assistance to school districts based on cooperative arrangements. Iowa reported providing state aid for 0.5 percent of the time a pupil is instructed by a teacher employed by another school district or jointly employed. If a substantial number of pupils share more than one class or teacher the weighting is reduced to 0.1 percent. Table 6 shows cooperative arrangement factors by state.

Table 7 shows "other" provisions reported by two states for providing additional revenue for small and sparse schools and school divisions. South Dakota reports a "larger mill deduction" for some rural districts. One state, Missouri, provides assistance based on the prior three-year average student count. Several states report factors such as this under "declining enrollment." Declining enrollment factors provide additional assistance to rural and other areas when enrollments fall. Transportation allotments can also provide additional revenue to rural areas that are isolated or sparsely populated as can a variety of special purpose factors that function to modify a state's basic finance structure to provide supplemental aid to students or school districts based on relevant, and justifiable excess costs.

DISCUSSION

A majority of states have included size and/or geographical isolation factors into their school finance formulas to compensate small or rural districts for the high costs of providing an adequate educational program. States that provide assistance to small schools or school districts generally define small in terms of a student population below a specific numeric threshold. Only one state reported an overall size threshold for all schools within a district. Louisiana allocates supplemental funding to all schools with less than 438 students.

TABLE 6
PROVISIONS IN STATE FUNDING FORMULAS FOR ADDITIONAL REVENUE BASED ON COOPERATIVE ARRANGEMENTS BETWEEN SCHOOL DISTRICTS

STATE	COOPERATIVE ARRANGEMENT FACTORS
Iowa	State aid is provided for 0.5% of the time a pupil is instructed by a teacher employed by another school district or instructed by a teacher who is jointly employed. If a substantial number of pupils share more than one class or teacher, the weighing is reduced to 0.1%.

TABLE 7
Provisions in State Funding Formulas for Additional Revenue Based on "Other" Factors

STATE	OTHER FACTORS
Missouri	Prior years student count on three year average of prior year.
S. Dakota	Smaller school districts have a larger mill deduction.

Most states provide differential, supplemental allotments to compensate for higher costs of small schools based on grade levels—elementary versus secondary. In all states awarding aid by level, targeted elementary school sizes tend to be about two to three times smaller than the required high school size for supplemental aid purposes. For example, California requires elementary schools to have less than 101 students to receive additional state aid and high schools to have less than 301 students. In Montana, elementary schools receive additional allotments if they have less than 300 students, but less than 600 students are needed for additional support in high schools.

For both the elementary and secondary school levels, median school sizes, targeted for the receipt of additional funding from the state, have grown over time. In 1978, Swift studied seventeen states that recognized small schools for additional funding and found the maximum enrollments for such aid ranged from 100 to 1,000 students, the median size was 193 for elementary and 300 for secondary schools (in Bass, 1988, p. 14). Currently the range is from 100 to 600 students, the median size, 150 for elementary and 500 for secondary schools. In contrast, state aid that is awarded based on school *district* size ranges from less than 150 students in Colorado to less than 4,000 students in New Mexico. The median was 1,500.

Since Swift's study, the factors for award of additional state aid for rural areas, have likely grown more complex and diverse. In 1989–90, for example, two states, New Mexico and California, reported providing additional state aid based on both school and district size factors. North Dakota allots additional assistance to one–teacher schools. Utah was the only state to report aid based on specific sizes for "junior high school." Texas provides two tiers of support to districts based on very small populations of less than 130 ADA; and small districts of less than 1,600 ADA. Pennsylvania adds a geographic isolation factor to its two tiers of size criterion in addition to a local wealth factor. In Montana, a sliding scale of support is provided to schools, that grows incrementally until a threshold is reached. The threshold varies for elementary and secondary schools. When a school reaches this threshold, no supplemental aid is provided.

To size stipulations, many states are adding a geographical isolation factor. In several states these factors exist in isolation (with no attendant size stipulation). Most states using isolation criteria, however, did not specify the specific definition of isolation that was utilized to determine eligibility under these criteria. Those that did, determined a school or district to be isolated based on the distance to the next school or district, the time required to travel to the next school by bus, or the sparsity of population. For example, in Minnesota, elementary schools were considered isolated if they were 20 or more miles away from the next nearest school. In Oregon, this distance was reduced by half, to 10 miles from the next nearest elementary school. In Nebraska, additional support is based on the number of persons in the district per square mile. In all cases, however, these allotments converge by recognizing the additional revenue required for the provision of education in small and isolated schools and school districts.

Although by themselves these adjustments are not yet overly complex, the growing complexity of state aid systems stem from the interaction of these factors with the basic equalizing grant and numerous other, "add–on" factors. Thus, additional revenue can flow to rural areas through a bevy of factors that can be added to the state aid program, such as linear density transportation formulas, enrollment loss provisions, and special population support factors, to name a few. Space does not allow full treatment of these and their effects on rural areas, however. This paper has therefore focused on the major mechanism that provides additional revenue supplements to rural and small schools and districts across the states, based on a fifty–state survey, and has briefly discussed overall state funding formulas as related to schooling in rural areas. As the review of literature suggests, attention to these factors is likely to increase in the future as a result of a shift in thinking concerning school size and school efficiency together with the growing focus on "results in education."

The continuing debate that arises concerning financing rural education, will, no doubt, focus not only on whether additional revenue should be provided to rural areas and the mechanisms used to distribute this funding, but also on several critical issues: (1) the actual level of support that is needed for the provision of quality education programs in small and sparse localities, (2) what financing mechanisms best meet the needs of rural, small schools, (3) how local capacity should be measured and utilized to determine finance distributions, and (4) curriculum enhancement options available to small, rural schools and districts.

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Special Education in Rural Schools

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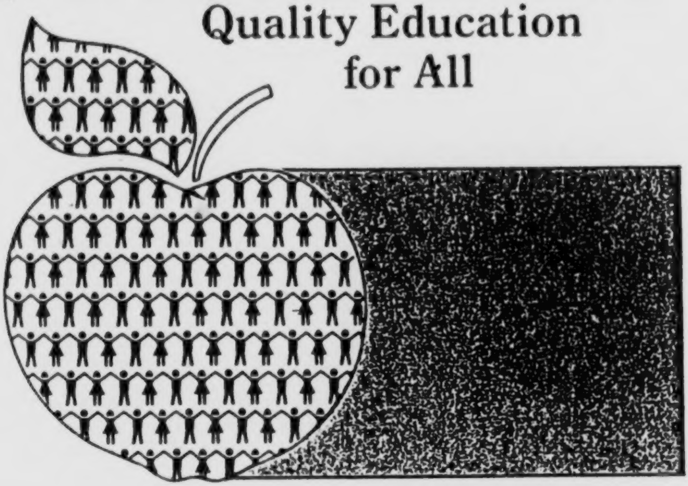
Beyond Separate Education

Quality Education for All



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chapter 12

The Politics of Special Education

Harlan Hahn

Although relatively little attention has been devoted to the controversy in the special education literature, the study of disability is currently experiencing a massive conflict between opposing paradigms that may have a critical impact on the fate of this discipline and related areas. The conventional approach to research on this subject has been shaped by a "functional limitations" model, which assumes that the principal difficulties of people with disabilities reside within these individuals, and that solutions can be found by surmounting or transcending such deficits to the maximum extent possible (Hahn, 1985a). Inspired in part by the growing disability rights movement, however, this orientation has been challenged by a "minority group" paradigm, which posits that the primary problems facing disabled[1] citizens are external rather than internal, and that remedies can be achieved through efforts to alter the environment in which they live, instead of their personal characteristics (Hahn, 1985b). While the field of special education traditionally has been dominated by the former model, which stresses the development of effective methods of instruction compatible with the restrictions imposed on students with various types of disabilities, the latter construct implies a comprehensive new agenda that promises to introduce significant changes in the content as well as in the techniques of elementary, secondary, and higher education. Since the minority group perspective identifies different problems and solutions as crucial issues in the lives of children or adults with disabilities, educators need to become increasingly familiar with the major tenets of this theoretical framework and with the distinctions between these two viewpoints.

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[1] The nomenclature of this presentation differs slightly from the terms employed by other studies in that "disabled" is sometimes used here as an adjective to describe the person. This usage implies the expectation that disability can someday be redefined as a trait that conveys pride and dignity instead of stigma and shame. Thus, it also suggests the hope that disability can be transformed into a positive source of personal and political identity rather than simply an attribute that is incidental to an individual's other interests or capabilities. However, an effort is made to avoid the use of words such as "disabled" as nouns, which seems to infer that this characteristic is the sole defining feature of all individuals included in this category. Language is obviously a crucial component of political change; while agreement has not yet been reached on some of the nuances of these terms, it is important to specify their intended meaning as clearly as possible.

THE DEFINITIONS AND POSTULATES OF CONTRASTING MODELS IN THE STUDY OF DISABILITY

The contrasts between the functional limitations and the minority group models are based in large measure on divergent definitions of disability. Whereas the functional limitations orientation has been supported by medical and economic concepts that concentrate almost exclusively on the physical or vocational needs of disabled individuals, the minority group approach is founded on a new sociopolitical concept that reflects a broader range of interests and objectives (Hahn, 1982). Each of these definitions has been incorporated into research and is evident in government policy concerning disability. But different phrases in this formulation are stressed by the medical, economic, and sociopolitical definitions, respectively. These variations in emphasis have important implications for the future of special education.

The Medical Definition

Undoubtedly, the most popular understanding of disability is represented by medical concepts that stress physical inabilities or limitations. This orientation reflects the clinical focus of medicine and psychology on efforts to strengthen the anatomically or psychically internal resources of the individual as the principal vehicle of rehabilitation (Stubbins, 1982). Yet, in many respects, the relatively permanent nature of disabilities or chronic conditions seems inconsistent with Parson's (1951) characterization of the "sick role," identified by Siegler and Osmond (1974) as a major component of the medical model. The medical model exempts individuals from ordinary social obligations in exchange for their promise to submit to professional authority and to devote all of their energies to the ultimate goal of complete recovery. Perhaps even more importantly, the emphasis in medicine on etiology, or the study of the causes of health problems, has spawned a vast range of diagnostic categories that not only disclose an implicit striving for prevention and eradication as eventual solutions to the problem of disability, but that may also bear little, if any, relationship to the functional or other skills of the persons labeled by these diagnoses. This system of categories has probably impeded the development of testing procedures that would permit forming valid extrapolations about the capabilities of individuals with various types of disabilities. As a result, there is a heavy reliance on medical classifications, which are concerned with the causes rather than the consequences of impairments. Such reliance raises serious questions regarding the validity of any measurement of the association between disabilities and physical, intellectual, or emotional capacities.

The Economic Definition

By contrast, the definition of disability most widely endorsed by public policy signifies an economic focus on the performance of expected roles and tasks. Since work probably constitutes the principal role expected of most individuals in an industrialized nation, disability has been defined in government surveys and in research by economists as a "health-related" inability or limitation on the "amount or kind of work" that a person can perform (Berkowitz, Johnson, & Murphy, 1976). Perhaps in part because of the strong influence of vocational training on rehabilitation programs during the period surrounding World War I, educational activities became closely linked with an economic understanding of disability that concentrated on preparing disabled individuals for entry-level jobs offering few opportunities for advancement. This association was strengthened by policies that defined disability as an inability to engage in "substantial gainful activity" (Berkowitz, 1987). Examples include worker's compensation indemnification policies for lost wages and the eventual adoption of income maintenance plans such as Supplemental Security Income and Social Security Disability Insurance. Hence, the primary goals of educators as well as rehabilitation personnel have been to improve the occupational skills of specific disabled individuals rather than to ameliorate the social and economic conditions that have produced endemic poverty and unemployment among this segment of the population (Howards, Brehm, & Nagi, 1980). At an individual level, this orientation has resulted in criticism of school programs. One such criticism was expressed by a young man with cerebral palsy who complained that he spent so much time learning how to tie his shoes (a task he subsequently delegated to his attendant) that he was never given an opportunity to pursue an appreciation of art, literature, or music, which later became important to his enjoyment of life. The tendency to use disability as a criterion for excluding persons from the labor force (except during World War II, when the waiver of these restrictions permitted disabled adults, women, and other minorities to demonstrate their productivity) supports the charge that workers with disabilities have been educationally and economically relegated to the "industrial reserve army." Such a practice reduces pressure that would otherwise be engendered by the intrinsic failings of a capitalist economic system (Hahn, 1987b).

The Sociopolitical Definition

The third major definition of disability directs attention to the sociopolitical significance of the interaction between persons and the environments that surround them. From this perspective, the basic problems encountered by citizens with disabilities can be traced to the external configurations of a disabling environment rather than to the internal traits of so-called personal defects or deficiencies. The sociopolitical approach also suggests that the most effective solutions to the difficulties confronting disabled people can be attained by efforts to improve the status of this group as a whole rather than by actions focusing on distinct individuals. As a result, this definition is the primary foundation of the minority group model of disability, whereas the essentially clinical orientation of the medical and economic viewpoints constitutes the primary support of the functional limitations paradigm. The most significant expressions of the sociopolitical understanding in public policy can be found in legislation such as Section 504 of the Rehabilitation Act of 1973, which explicitly identifies disability as a source of discrimination and which seeks to outlaw this kind of prejudice (Scotch, 1984). Hence, measures prohibiting discrimination, and programs designed to alleviate physical or occupational disadvantages, are based on two fundamentally distinct analyses of the origins of the problem of disability that cannot be readily be treated as reconcilable or complementary.

In addition, the sociopolitical definition of disability seems to encompass a radically new assessment of expectations concerning the behavior of children and adults. In the past, the ability to achieve mastery of the existing environment was usually considered a necessary prerequisite to the exercise of the rights of citizenship. Such rights include the freedom to vote or to participate in political deliberations, as well as the opportunity to receive an education and to pursue a livelihood. Consequently, judges have been reluctant to redress the grievances of persons using wheelchairs whose access to polling booths, juries, and legislative or judicial chambers is barred by steps or other architectural barriers. Similarly, many early court cases have upheld the decisions of school boards and administrators to exclude students who could not gain entrance to their classes for comparable reasons (Burgdorf, 1980). And yet, there has been an increasing tendency for many localities to adopt regulations requiring, at least in new construction of schools and other public buildings, that facilities be made accessible to people who use wheelchairs. This transition has reflected a growing realization that mastery of the human-made environment is not an appropriate criterion for participation in the life of the community.

Contrasting Models

This change has vast implications for the development of educational practices. In fact, the origins of special education probably can be traced to the parochial constraints of conventional pedagogical techniques that have penalized students with hearing or vision impairments. Such programs relied exclusively upon verbal communication in the classroom and upon written communication in the dissemination of instructional materials. From a sociopolitical perspective, a clear solution to easing the difficulties of persons with disabilities can be achieved through the use of multiple modes of communication, just as universal accessibility represents a crucial step toward fulfilling the needs of persons who use wheelchairs. These principles might also be fruitfully applied to the mental and physical skills ordinarily required of children and adults as part of the so-called "activities of daily living." Obviously, the creation of an environment adapted to the needs of everyone is a distant vision. But the attainment of this goal may ultimately be determined both by technology and by the limits of the human imagination. In many respects, this environmental objective might be a more appropriate standard for evaluating the capabilities of people with disabilities than are assessments of their functional capacities that fail to recognize the constraints imposed by their surroundings.

The logical implications of the functional limitations and the minority group paradigms, therefore, appear to indicate alternative educational strategies. From the former perspective, which locates the principal problem within disabled individuals, a primary task is the remediation of their functional deficits to the maximum extent possible. Hence, attempts are made to provide disabled young people with the skills that they must acquire in order to be productive in an environment that is usually not adapted to their interests or needs. The success of these efforts is measured by the comparability of proficiency displayed by such students and by their nondisabled peers. However, the characterization of disabled individuals by functional deficiencies has meant that remedies that focus solely on this dimension of their problems can never be fully successful. By contrast, the minority group model ascribes the source of the basic problem of disability to external instead of internal phenomena, and strives to adapt the environment to the aspirations of disabled people rather than to adapt the individual to the demands of the environment. In addition, since a disabling environment is regarded as inherently discriminatory, this approach views efforts to instill a positive sense of identity among persons with disabilities as a crucial component of educational objectives. Instead of concentrating on the task of remedying alleged functional defects, educational policies based on the minority group concept encourage disabled youth to extend their academic strivings both to improve their own lives and to enhance the status of the group of which they are members. As a result, these programs seek to avoid the imposition of restrictive limits on the potential of disabled students by building upon their distinctive experiences and capabilities.

The competing models in research on disability are also based on different postulates. Whereas the functional limitations orientation asserts that the primary difficulties of disabled individuals stem from their physical deficits, the minority group approach assigns primacy to the environment, and specifically to public attitudes, which reveal extensive evidence of aversion toward people with disabilities (Jones, 1984). In many respects, the appearance of traits signifying disability represents an almost Rorschach-like stimulus that usually evokes a powerful visceral or even irrational impulse to draw away from others who are perceived as alien or strange. No matter how much energy is expended to smother these emotions with sympathy or benign support, the propensity to avoid people with disabilities usually is stronger than the instinct to offer acceptance. This fact underscores the need to integrate disabled students in school classrooms. As a result, efforts to attack the origins of the problems of children and adults with disabilities from a minority group perspective concentrate on attempts to change pervasive attitudes rather than on efforts to alter the disabled individual.

The second major proposition of the minority group concept also emphasizes external circumstances by pointing out that all aspects of the environment are fundamentally molded by public policy. The configurations of the social and other human-made structures that shape human behavior are not the products of immutable natural laws; they are basically determined by the fact that governmental decisions either permitted or required them to be designed and constructed in that manner. Hence, legislation can be effectively utilized to create an increasingly favorable educational, social, economic, and even physical climate for persons with disabilities. On the other hand, the functional limitations approach treats the environment almost as a given, and focuses instead on the benevolent assistance provided by professional training and expertise. Consequently, this orientation has been closely allied with dominant models of education based on the conviction that learning is most likely to occur under the tutelage of a professional educator.

The final principle of the functional limitations paradigm, therefore, is founded on the alleged efficacy of professional intervention. Even though the functional deficiencies of disabled students may be ultimately incurable, this approach assumes that professional help offers the best promise for them at least to approximate equivalency with their nondisabled counterparts. By contrast, the third postulate of the minority group perspective joins the two prior statements by concluding that public policies are a reflection of prevalent attitudes and values. Hence, facets of the environment that tend to separate or segregate disabled and nondisabled citizens might not be accidental or coincidental (Hahn, 1986). The pervasive nature of social institutions that impede interactions between disabled and nondisabled persons in the classroom or elsewhere have produced a milieu in which the former group has been denied the equal treatment to which they are legally entitled in the United States. While the functional limitations model views disability primarily as a personal misfortune, the minority group perspective considers it a source of collective discrimination. Similarly, whereas the functional limitations orientation tends to prescribe compensatory adaptations as a principal remedy for their difficulties, the minority group approach contends that solutions to the major problems of disabled Americans can be found through the strict enforcement of legal guarantees of freedom and equality. Perhaps even more significantly, the three major principles of the minority group concept support a strong case that disabled citizens should be considered from a legal point of view as a "suspect class." This calls for rigorous judicial scrutiny to determine whether or not distinctions made on the basis of disability reflect discriminatory practices, within the meaning of the "equal protection" clause of the Fourteenth Amendment to the U.S. Constitution (Hahn, 1987b).

CHARACTERISTICS OF THE DISABLED MINORITY

The description of disabled children and adults as a minority group is also supported by the major characteristics of this segment of the population. Disabled Americans have one of the highest rates of unemployment, poverty, and welfare dependency in the country (Bowe, 1978, 1980). Although each of these statistics may be attributed to functional incapacities as well as to attitudinal discrimination, the prejudicial origins of these patterns is underscored by the prevalence of segregation between disabled and nondisabled persons in education, transportation, housing, and public accommodations (Hahn, 1983). In fact, citizens with disabilities have been subjected to more rigid and pervasive segregation practices than those imposed under apartheid.

Discriminatory practices have had an indelible imprint on the lives of disabled women and men. According to a Louis Harris survey, a plurality of disabled Americans feel that they "are a minority group in the same sense as are blacks and Hispanics" (Harris and Associates, 1986, p. 114). The same survey revealed shocking evidence of the isolation of individuals with disabilities. Whereas 78% of all adults had attended a film at least once in the past year, only 36% of their disabled counterparts had gone to a movie theater in the same time. Similarly, 58% of nondisabled persons, but only 34% of disabled respondents, typically ate at a restaurant once a week or more. The comparable figures for supermarket visits were: 87% of nondisabled persons versus 62% of disabled persons; significantly, 13% of disabled adults had never been to a supermarket (Harris and Associates, 1986). These percentages may reflect the mixed effects of functional issues, architectural barriers, and social aversion, but the combination of these factors undoubtedly has left millions of disabled men and women with a profound sense of personal and sociocultural aloneness.

Furthermore, unlike many minorities, persons with disabilities lack a feeling of generational continuity. If they acquire their disabilities as children, they are usually raised by nondisabled parents who might not be adequately prepared to provide a source of solace and understanding when their children encounter the animosity and aversion of the outside world. If they become disabled later in life, they may have even fewer resources to cope with the discriminatory attitudes that they confront. Like other disadvantaged groups, such as women, blacks, Hispanic Americans, Asian Americans, and aging citizens, people with disabilities must refute accusations that their subordinate status in society results from biological inferiority rather than from prejudice. Perhaps the principal distinction between these other segments of society and the disabled minority, however, is that most of the former groups have been at least partially successful in rebutting charges of biological inferiority. In contrast, vestiges of this notion continue to be used to explain the social inequality of persons with disabilities.

Disabled children and adults also share many experiences that may eventually become the basis of a distinctive subculture. While the complete range of these common incidents have not been extensively studied or enumerated as yet, at least a few of them that have important implications for education deserve mention. As a result of their almost universal exposure to the medical model, for example, a disproportionate number of individuals with disabilities become involved in a problematic relationship with physicians and professional authorities who seem to exercise undue influence over their personal activities. This fact may explain the misunderstandings that frequently permeate the subsequent interactions between disabled students and teachers, rehabilitation personnel, and others who attempt to assert what they consider their professional responsibilities. In addition, persons with disabilities are aware of the need for detailed planning to meet the routine demands of everyday life. As Gliedman and Roth (1980) have documented extensively, the achievements of disabled children may not fit developmental theories that have been prepared to chart the progress of their nondisabled counterparts. Consequently, there is a serious danger that teachers might fail to recognize both the abilities and the significant contributions that students with disabilities can make to the educational process.

Perhaps most importantly, there is a pressing need for educators to understand the nature of the discrimination directed against the disabled minority. A recent analysis has contended that this prejudice can be attributed either to "existential" anxiety, the worry that "there but by the grace of . . . go I," or to "aesthetic" anxiety, the fearful response to others whose appearance is perceived as unpleasant or upsetting (Hahn, 1988a). While "existential" concerns seem to be most closely aligned with the cognitive orientation of the functional limitations approach and special education, "aesthetic" reactions reflect powerful visceral and even unconscious feelings that are often manifested by aversion. In most studies of prejudice against people with disabilities or other disadvantaged groups, comparatively little attention has been devoted to the aesthetic dimension of such attitudes. For some observers, this factor may even be perceived as a relatively trivial source of discrimination and segregation. And yet, the accusation that someone is unappealing or even repugnant seems to be one of the most damaging insults that can be hurled at another human being. To a far greater extent than many might be prepared to admit, pervasive notions of attractiveness or unattractiveness could have a determinative effect on the sense of self-esteem that is crucial to educational success and to social and political advancement.

In fact, aversion to persons with disabilities could be a principal explanation for the failure of the disabled minority to develop a positive sense of personal and political identity. The development of such an identity is an essential foundation of the movement to improve the status of persons with disabilities in society. Many men and women with disabilities are affected by the stigma that is also the major source of their oppression. To be disabled not only involves functioning in an environment replete with obstacles that eventually may be circumvented or surmounted, but it also means living with a prominent physical characteristic that is generally considered unattractive. Often, disabled individuals would prefer to identify socially and politically with other personal attributes, such as their age, gender, ethnicity, occupation, or socioeconomic status, rather than with a disability that might constitute the most salient and significant aspect of their lives. As a result, even though disabled citizens form one of the largest minorities in the United States, they have never been able to organize a powerful political constituency capable of exerting a strong impact on educational reform and other relevant policy issues.

The most debilitating effects of prejudice based on aesthetic considerations undoubtedly have been imposed upon children and adults with visible disabilities. The realization that this form of aversion has affected interactions between nondisabled persons and persons with a wide range of sensory and mobility impairments, therefore could provide a means of developing a sense of organizational cohesion to transcend the etiologically based diagnostic classifications that have previously fragmented and divided the disabled minority. In addition, people with so-called "hidden" disabilities have been subjected to similar discrimination through the process of labeling (e.g., Mercer, 1973). And there is even strong evidence that the treatment of students with learning disabilities is significantly influenced by responses to their physical appearance and behavior (Bryan, 1976; Bryan & Bryan, 1978; Bryan & Sherman, 1980; Schumaker, Wildgen, & Sherman, 1982; Shepard, Smith, & Vojir, 1983). Hence, there is a pressing need for educators as well as other nondisabled professionals to become involved in the struggle to redefine the personal and political identities of citizens with disabilities in a manner that might allow them to combat the aesthetic aversion and discrimination that has been a major source of their oppression.

THE PRINCIPLES OF EDUCATIONAL POLICY FOR STUDENTS WITH DISABILITIES

From a minority group perspective, the principal change to be sought in education policy is the "mainstreaming," or integration, of disabled students into regular classrooms. The foundations for this effort were laid in the historic 1954 United States Supreme Court decision in *Brown v. Board of Education* (345 U.S. 483, 98 L. Ed. 873, 74 S. Ct. 686). In arguing that education is indispensable to success in life, this opinion concentrated on the debilitating effects of the simple separation of students into distinct groups by generating "a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone." Moreover, in one of the most widely criticized portions of the decision, the Court cited the research of Clark and Clark (1952), which indicated that preference for a white appearance represented a learned value promoted by separate schools for black and white children. The 1886

Plessy doctrine allegedly supporting "separate but equal" educational facilities was founded on sociological theories that assumed there was a natural aversion to "commingling" of the races. Yet, the 1954 Supreme Court justices wanted to emphasize modern studies revealing that attitudes toward physical differences such as skin color reflected socialization perpetuated by segregation rather than innate feelings. Thus, the *Brown* decision turned on the adverse educational impact of separation rather than on the quality of the instruction offered in these schools. The Supreme Court concluded that, "in the field of public education the doctrine of 'separate but equal' has no place. Separate educational facilities are inherently unequal."

Mainstreaming: The Integration of Disabled Students into Regular Classrooms

The principle of mainstreaming seems especially applicable to the education of disabled students. The badge of inferiority inflicted upon them by separation on the basis of aesthetic as well as other considerations has left deep psychological scars that often appear to overshadow any instructional benefits that may be derived from their placement in distinct programs. Informal discussions with disabled adults who attended special schools, for example, have elicited vivid memories of being lifted from a wheelchair and placed on a bus (lacking an appropriate lift) and transported across a city to similarly inaccessible classrooms, while nondisabled students spat on the windows of the bus as it stopped at street corners along the way. Another quadriplegic man, who was fortunate enough to have a highly qualified home tutor, passed the rigorous examinations qualifying him for a full scholarship to his state university. But the university denied him admission because of his disability. This took place in the same year that black students first entered the leading universities of several Southern states. The importance of encouraging increased interaction between disabled and nondisabled children as a means of redressing a sense of inferiority is underscored by the research of Richardson and Royce (1968). Their study indicated that nondisabled children, regardless of their racial or ethnic characteristics, are more liked by other students than their disabled counterparts, and that "physical handicap is such a powerful cue in establishing preference that it largely masks preference based on skin color." The need for desegregated or mainstreamed education is reinforced by the general finding that prejudice may be reduced by frequent contacts between members of the dominant majority and minority groups at equivalent levels of social status (Allport, 1954). Furthermore, there is a great deal of accumulated wisdom suggesting that the most significant educational experiences of students, including those in higher education, result from having increased opportunities to transcend the parochial limits of their own cultural values by frequent exchanges with persons from different backgrounds. Hence, there appear to be persuasive reasons to shift the burden of proof in the education of disabled students to those who would want to attach

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major qualifications to the principle that "separate educational facilities are inherently unequal."

Perhaps equally pertinent to the development of special education was the second opinion in 1955 of the Supreme Court in *Brown v. Board of Education* (349 U.S. 294, 99 L. Ed. 1083, 755S. Ct. 753), which proposed school desegregation with "all deliberate speed." Such provisions permitted opponents of integration to organize resistance to this policy in the same way that the implementation of subsequent laws to provide equal rights for students with disabilities has been frustrated and delayed. In the controversy surrounding the Coleman Report (1966) more than a decade later, educators debated the failure of desegregation to produce the equivalency between white and black scholastic attainment that many of them had anticipated. What was often ignored in these arguments, however, was acknowledgment of the possibility that academic achievements may be virtually determined by the teacher's early subjective impressions of students on the first day of school. Conveyed by subtle cues, recorded in dossiers, and supposedly validated by later tests, such impressions create expectations and self-fulfilling prophecies that may follow them through the rest of their educational careers (Musick, 1975). In the case of children with sensory, mobility, chronic, or learning disabilities, the probability that this type of instinctive judgment might exert an undue influence on assessments of the intellectual limitations of these individuals seems exceptionally high. In a society that places inordinate emphasis on beauty and attractiveness, unusual care must be taken to ensure that programs designed for such students do not reflect impressionistic bias based on a failure to conform to prevalent standards of physical appearance or behavior.

The Elementary and Secondary Education Act of 1965

One of the most crucial influences affecting the development of public policy for children with disabilities, however, arose from issues that were somewhat unrelated to discrimination or to special education. In the 1960s, the federal government sought to find a way of providing aid to local schools that would circumvent the bitter debates over "states' rights" in education and the "separation of church and state," which raised serious questions about the right of parochial institutions to receive government support. In 1965, these legislative logjams were dislodged by a compromise that permitted the passage of the Elementary and Secondary Education Act. This provided funds for libraries, instructional materials, and educational innovations for schools in districts containing a disproportionate number of low-income students. In some respects, this position appeared to mark a move away from the earlier argument that educational disadvantages could be destroyed by the removal of separate classifications toward the belief, perhaps inspired in part by politicians' reactions to the controversy over the Coleman report, that this objective might be achieved through compensatory efforts. Similar provisions were contained in amendments adopted the following

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year to support the teaching of disabled young people. As a result, these principles seemed to imply that the instruction of deprived students required unusual concessions to their academic deficits rather than the creation of educational settings based on the concept of equality. In a society that seems to abhor the principle of quotas and the equitable distribution of resources for public schools, there has been a widespread opinion that the basic conditions of equality could be satisfied by the concept of equal educational opportunities. Equal educational opportunity implies the provision of compensatory instruction to ensure that contestants would occupy equivalent positions at the starting line of a race that would ultimately be decided by individual merit, even though some of the lanes on the track may be littered with obstacles that impose undue burdens on disabled persons and other competitors.

The Education for All Handicapped Children Act of 1975

PL 94-142, the Education for All Handicapped Children Act of 1975, included many elements that represented significant departures from the principle that shaped the *Brown* decision. In particular, the formula reflecting the political compromise that allowed the passage of the Elementary and Secondary Education Act became an important precedent for the reform of education for students with disabilities. By treating such support as a special concession to the peculiar needs of disadvantaged youth, this approach reinforced the assumption that they already possessed educational deficiencies that would undermine their academic status and eclipse other talents. It also implied that these programs represented a privilege rather than a resource to which they were entitled as a legal right. This orientation was compatible, however, with the views of many of the principal supporters of PL 94-142, such as the Association for Retarded Citizens (ARC-US) and the Council for Exceptional Children (Levine & Wexler, 1981). Conspicuous by its absence was the disability rights movement, which had not been able to overcome the lack of generational continuity and the disunity imposed by diagnostic categories to play a significant role in the formulation of educational policy. Instead, the movement was focused on the elimination of prejudice against disabled persons in many areas of life. Since both parent and professional organizations have tended to concentrate on the nature of the instruction provided by special education, this concern has tended to overshadow the debilitating effects of stigma resulting from the separation of disabled and nondisabled students in public schools.

Many of the provisions of PL 94-142 seem to reflect the agenda of interest groups representing parents and professionals rather than the interests of the disability rights movement. Instead of basing their legislative and judicial strategies on the struggle of other minorities for equal rights, these groups, perhaps naturally influenced by the legacy of residential institutions in the education of disabled students, developed principles derived from litigation concerning the rights of persons subjected to incarceration (e.g., Rothman & Rothman, 1984). Thus, the somewhat negative concept of a "least restrictive environment" was developed as a standard for evaluating the equality of the school milieu, rather than the distinctly positive goal of creating an environment adapted to the needs of everyone. Integration, or mainstreaming, appeared to become a secondary or distant purpose instead of an urgent or primary objective. And, in the individualization and expansion of services, and in the design of an elaborate system of appeals, the organizations that authored this legislation displayed a strong faith in the efficacy of professional intervention in protecting the interests of a powerless group such as children with disabilities. But, in a pattern reflecting the paternalism that has often characterized the formulation of public policy about disability, Congress adopted the lofty aims of educational reform, perhaps fearing the electoral retribution that might result from a refusal to support the aspirations of disabled citizens, while neglecting to appropriate the funds necessary to implement them (Hahn, 1983; Levine & Wexler, 1981). Moreover, there is significant evidence that the key principles incorporated in PL 94-142 have failed to produce desired results in large measure because the parents of disabled children often feel intimidated by professional expertise (Weatherly, 1979; see also Chapter 9 of this volume).

ALTERNATIVE EDUCATIONAL PROGRAMS

There is a pressing need for a new approach to the education of students with disabilities. Instead of concentrating on the provision of the professional assistance that has long been prescribed by the functional limitations paradigm, teachers might appropriately devote increased attention to the design of programs that would contribute to positive feelings of dignity and pride among disabled youth, especially about those characteristics that have previously caused them to be stigmatized and devalued (see Chapter 14). As the experiences of other minority groups have indicated, such efforts may be essential for the development of a favorable self-image which is crucial to the pursuit of other educational ambitions.[2] What is needed in elementary, secondary, and higher education is a disability equivalent to the "black is beautiful" movement of the 1960s that would focus on the potential abilities of disabled young people, rather than on their supposed functional deficiencies. Although the full scope of this approach has not been developed as yet, an increased appreciation of the history of a minority, especially one that lacks generational continuity, and an enhanced awareness of alternative aesthetic values are two critical components of educational activities that could promote a growing sense of dignity and pride.

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[2] The author's own experience may provide amusing testimony about the importance of self-concepts in determining academic success, and the extent to which testing can either support or undermine this factor. Because I had polio at the age of 6, one week before I was scheduled to begin school, I missed several years of early class work which I never made up when I finally left the hospitals. Since I was raised in a rural area where the nearest special school was more than 30 miles away, I returned to regular classes. At the age of 13, however, I broke my hip; this required me to be in a full body cast for more than 6 months. Because an economic rationale was needed to justify the expense of installing a telephone line that would enable me to keep up with my classes during this period, the state vocational rehabilitation agency sent a specialist to administer an IQ test verbally. What this man did not know, however, was that he arrived on a day of the World Series and that I was listening to the baseball game on a radio under my pillow throughout the exam. For some reason, which I can only attribute to fortuitous luck that altered the course of my life, I gave a series of random answers to his questions that fit the profile of academic ability. The befuddled man left convinced that I was a genius; since the test seemed to support this erroneous impression, I never questioned his judgment, even though I secretly knew that the results were spurious. Thus, I acquired what I consider the most crucial determinant of educational success: confidence in one's own capabilities, and I never had any serious difficulties in my subsequent academic career. If my random answers had fit a less favorable profile, the outcome could have been decisively negative.

The largely unexamined recorded history of persons with disabilities dates back to accounts of the Neanderthal, Shanidar I, named for the cave in Iraq where his skeleton was discovered, whose "remains . . . show that even in death his person was an object of some esteem" (Solecki, 1971, p. 196). There is evidence that disabled slaves performed during the Roman Saturnalia, and that they worked as entertainers at royal courts and medieval festivals. It has been suggested that the appearance of women and men with disabilities was commonly associated with a heightened atmosphere of sensuality and the relaxation of ordinary inhibitions on social, political, and sexual behavior. However, this legacy was gradually eclipsed by changing concepts of work that eventually reduced disabled persons to the status of pitiful beggars or objects of charity whose survival depended upon the benevolence of the nondisabled majority (Hahn, 1988a). Considerable care, therefore, must be exercised in the interpretation of the history of persons with disabilities, which seems to raise basic epistemological as well as pedagogical issues. The few historical accounts of the role of disabled entertainers in ancient and medieval times, for example, are replete with terms implying that these practices were "barbaric" or "uncivilized" in comparison with the more "benign" and "enlightened" attitudes of the modern era. In many respects, these activities undoubtedly were crude, and the humor was often at the expense of performers as well as audiences. And yet, for disabled individuals who have been influenced by their milieu to believe that their disabilities can only be viewed as a source of stigma and shame, the realization that physical differences historically evoked sensuous and even bawdy feelings may represent an important new insight. The study and teaching of any subject, and especially such a provocative phenomenon as disability, is strongly affected by the temporal and cultural constraints of the theoretical framework through which it is examined. The need for a history of disabled people might be appropriately coupled with the need to develop a revisionist history based on the experience and perspectives of this minority.

As another crucial aspect of this endeavor, increased attention could be devoted to exploring the historical sources of the disability rights movement. In the United States, for example, important precursors of these trends may be traced to the writings of Helen Keller (Foner, 1967), who derived many of her socialist beliefs directly from her disability experience. Another early advocate was Paul Strachan, leader of the American Federation of the Physically Handicapped. In the 1940s, Strachan advocated for the establishment of a quota for the employment of disabled workers and for an early form of "disability allowance"

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to offset the additional costs that must be borne by individuals with disabilities (Berkowitz, 1980). Although the ideas promulgated in the nineteenth century by major thinkers such as Charles Darwin, Karl Marx, and Sigmund Freud did not provide the basis for a favorable assessment of disability (Hahn, 1987a), there appears to be ample evidence to permit the preparation of a new history of disabled people that could be introduced into the curricula of elementary, secondary, and higher education.

A second important innovation that might be readily incorporated in school classes involves the aesthetic aversion that is often a major source of prejudice against students with disabilities. In an era when young people are exposed to millions of hours of visual messages, through television and film, about a relatively restricted range of bodily images, it would seem appropriate for schools to devote at least some attention to the issue of physical appearance. Students may need to learn that preferences about this matter are molded primarily by the process of socialization, and that all human beings have the capacity to appreciate a broader range of aesthetic values than the idealized standards of physical beauty presented in the mass media. A candid discussion of these topics could help disabled children cope with the rejection that they encounter from their nondisabled peers. Such coping skills become increasingly important with the burgeoning sexuality of adolescence which, as Elkind and Weiner (1978, p. 550) note, is also the age when "previously happy, cheerful, and 'gutty' handicapped and crippled (sic) children often experience their first real depression." This sort of instruction could also be of major benefit in freeing nondisabled youth from the psychological pressures of the conformist notions of appearance and attractiveness exerted by the media.

The logical implications of the minority group model of disability denote a different agenda from the principles inferred by the functional limitations approach. From the former perspective, perhaps the most important task is the development of a positive sense of identity among disabled children and adults that will sustain their strivings to achieve educational and other major objectives in life. In the immediate aftermath of the onset of disability, people of all ages are required to solve two of the most difficult metaphysical questions that can be posed to any human being, namely: "Why?" and "Why me?" Answers obviously vary, but one experience seems almost universal. Having a disability gives a person a different view of the world; that difference can become a valuable source of personal insight and creativity. Educators may need to learn to encourage disabled students to use these original perspectives as an asset to further their academic ambitions. Participation in the disability rights movement may furnish a sense of meaning and purpose in life that can also support the pursuit of high scholastic aspirations. In all of these endeavors, educators can emphasize the benefits of self-help rather than professional intervention as a means of instilling a sense of empowerment that may permit disabled persons to fulfill their potential.

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Finally, the educational implications of the minority group model point toward the creation of a new set of countercultural values. In a fundamental sense, aversion toward persons with disabilities signifies the superficiality of physical standards in the modern age. For thousands of years, disabled people have survived and made valuable contributions to their communities even in the face of overwhelming stress on their supposed defects and deficiencies. In a society that seems obsessed with competing to attain bodily perfection in appearance and functional skills, disabled men and women may have much to teach their nondisabled counterparts about the value of cooperation based on the creativity of alternative perspectives.

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Rural "at-risk" students -- Directions for policy and intervention

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Abstract

This article includes excerpts from case studies of at-risk students. It discusses the high prevalence of at-risk students in rural areas, the relationship of this phenomena to rural cultures, and basic conditions associated with being "at-risk." Necessary policy and social changes are described and how these can be achieved within the context of a given rural community. School and community preventive and treatment services are detailed. The article discusses the need to address the "secondary" disability (the emotional overlay) of an at-risk handicapped student to facilitate effective intervention with the "primary" disability. The article concludes with a description of the need for systemic change including an emphasis on self-esteem education, appropriate preservice and inservice, community-business-school partnerships, family involvement, and community education.

Case study excerpts

The following are excerpts from case studies developed as part of a project designed to enhance the self-esteem of at-risk students functioning in a mainstreamed environment. Vital information about the students has been changed to protect their identities. The project was conducted by staff of the National Rural and Small Schools Consortium (NRSSC) and the American Council on Rural Special Education (ACRES). Pre- and post-tests concerning the students' self-esteem were given to the students, their teachers, and the group facilitators. Pre- and post-interviews were also conducted with the principal and counselor. Pre- and post-measurements improved regarding student self-esteem and rates of school attendance. The students also reported academic improvements, a decrease in alcohol and drug use, and less frequent sexual activity. Curriculum content in the project was focused on:

- self-acceptance and change
- discovering individual goals
- being responsible for one's own behavior
- choices individuals have
- how people allow their thoughts to control them
- cooperation vs. the need to be "right"
- feelings–
    - identifying them
    - their importance regarding controlling one's life
    - effectively dealing with them
    - accepting things one doesn't like
    - and changing what one can
- communication skills–
    - to say what is needed/wanted
    - to deal with angry people
    - to avoid manipulating others
    - or being manipulated when one is angry, hurt, or sad
- individuals get what they expect
    - (regarding achievements, rewards, joy, and disappointments)
- relationships with peers, parents,
    - authority figures, and those of the opposite sex.

Marsha

Marsha is a short, attractive 12-year-old child. She constantly strives to be the center of attention while loudly popping bubble gum, distracting other children in the class, or doing seductive break dancing to attract a crowd. Her mother, an alcoholic, who experienced a very abusive childhood, "did not notice" that her boyfriends sexually abused

Marsha from the time she was two years old. Marsha has never known the identity of her father. Although her mother has been a recovering alcoholic for five years, she finds herself unable to cope with Marsha's behavior problems, including those in school. Marsha has developed very effective skills in manipulating others and lies adroitly. She is of above-average intelligence, and her grades are poor. When asked what would make her happy, she replied that she wanted a boyfriend to give her a baby so that she would finally have someone to love her.

Cindy

Cindy, 12 years old, is a homely child with stunted growth, high intelligence, and poor grades. She has a visibly low self-concept, and rarely has eye contact with others. Her frequently inaudible voice reflects her lack of self-confidence. She hunches over to hide the fact that she has reached puberty. She desperately seeks friendship and sets herself up with peers who treat her abusively. Most of the friends Cindy has made tell her that her father, who lives across town from Cindy, has made suggestive sexual comments to them. Cindy lives at home with her mother and her mother's boyfriend, who is 15 years younger than her mother. As her mother works the night shift, Cindy is primarily in the care of the boyfriend and spends a lot of time at his peers' homes. She casually mentions that they use a lot of drugs. The school counselor wonders if Cindy is being sexually abused by the mother's boyfriend. Cindy wants to move away from home and live with an aunt in another state. Cindy states that her recovering alcoholic mother continually tells her, "You think you won't be an alcoholic, but you will be because I am. There is no way to escape it." Her teachers do not feel that she is a capable student. The child protective services unit in her area has no authority to approve her moving in with her aunt without a court awarding custody to that individual.

Cindy's life goal is to be a psychologist and to help others.

Robert

Robert, at 12 years of age, is easily as large as a 16-year-old. For two years, he was so frequently accused by his peers of taking steroids that he decided to try it. He liked the results and has continued to do so. Robert's goal is to look like Sylvester Stallone and to please his father by being a successful wrestler. A sharp contrast to his size is his typical manner of dropping his head toward his chest and speaking in a very low tone of voice without eye contact with the person to whom he is speaking.

His family is upper middle class and very involved in religious activities. His mother frequently states that she doesn't feel that her children have any right to express any displeasure about their lives. Her father was an abusive alcoholic, and she feels that her children have "everything." She frequently states to the school counselor and a project facilitator that she wishes that she had never had any children. Robert's father remarks that he "just wishes Robert would get along with his family and at school." Although Robert's core teacher says that he is basically a "teddy bear," he has been involved in several attacks on his schoolmates. Teachers have stated that these were brought on by dares or taunting from other students. His mother took him to an emergency room last year when he put his hand through a glass window in a fit of anger at a family member. Robert states that he wishes his mother would "hug him" and that his parents would believe in him.

Robert has been classified as learning disabled and is mainstreamed at school. His grades are poor. His homeroom teacher has encouraged him to assume that he will not be able to be successful in academics. He remarked to Robert and a project facilitator that Robert should "be okay with that" and "find something else he can do well."

Robert has been convinced for two years that he was responsible for his cousin's death. He was illegally driving a car in which his cousin was a passenger when the car was hit by another driver and the cousin suffered a very painful death. The police report indicated that Robert was not responsible (even though he was illegally driving). Robert was so despondent over his guilty feeling, that he attempted suicide. He was not successful, and shot himself in the leg. He never told his parents; his friends simply sewed up the wound and he has successfully hidden it from his parents.

Lynn

Lynn is a 12-year-old who consistently exhibits hyperactive behavior. Both teachers and her peers find her difficult to be around because of her constant need for attention. She takes Ritalin, and is constantly eating candy. She misses her brother, who lives in another state with her father, and says that her mother is always "putting her down." The specific conversations she relates are clearly verbally abusive. She is so used to being perceived as unlovable that she sets herself up (e.g., lies to her peers or otherwise creates conflict situations) so that she will be rejected by her peers. Lynn's teachers find her a highly frustrating, distracting element in their class, due to her hyperactivity. No one has taken away the large bag of candy that she carries to school each day full, and empties by 3:00 p.m. Lynn's goal is to live with her father's ex-girlfriend, whom she says is the only person who has ever been nice to her. She has not spoken to this individual in two years.

Carry

Carry, 12 years old, has been diagnosed by appropriate medical and educational personnel as having a severe hearing impairment. Her behavior is moody. Her grades are above average. She has written numerous notes to her peers and one to her teachers stating that she is considering attempting suicide. She reports that she has tried to do so in the past and has not been strong enough to carry out her wishes. Upon close observation, it becomes apparent that her hearing impairment is quite selective. With a great deal of fear, embarrassment, and shame, Carry confides that she has been repeatedly molested by her older brother since she was seven years old. She lives with her mother, and the brother and twin sister now live with her father. She is consistently disappointed that the local child protective services division assigns a case worker who is always "going to get to her case as soon as possible". She feels a great deal of guilt about sharing information about her molestation and is concerned about her twin sister being left in the home where her brother lives. She complains that her mother never listens to her because she and her boyfriend are "always too busy smoking pot." Carry has a penchant for complaining about stomach problems and other physical ailments that come and go, depending upon her emotional state. Carry's goal is to live somewhere other than with her mother or father.

Jose

Jose, 12 years old, is one of the smallest boys in his class. He rarely talks and looks embarrassed and shy when spoken to. Jose appears to be afraid of his father, an alcoholic, and relates that his father has abusive behavior towards his mother. Jose feels that he is a burden to his family and that his mother has too many concerns of her own to deal with Jose's. His core teacher's pre-test indicated that Jose is passive and "never counteracts me on anything, even though his follow-through is poor." Upon close observation, it is apparent that Jose is a very bright student and takes in all interpersonal interactions and information shared within a group. He is able to synthesize the process of the entire group with accuracy.

By the end of the self-esteem class, he states that he has learned how to keep his father from hitting him by using his new communication skills. His homeroom teacher states that Jose is "for the first time, willing to share with the class" and that she "is surprised how much he knows." Jose's goal in life is to have a job that will allow him to buy all of the video games that he desires.

Elaine

Elaine is a 14-year-old who frequently smokes cigarettes and pot. She has tried "most drugs," and says that even a cigarette, although "smoking is not cool," gives her relief from her problems. She has been home schooled in the past, has given public schools a semester trial, and now is electing to go back to home schooling. Her family is upper middle class. The school counselor suspects that her father is sexually abusing her, although there is no evidence that is substantial enough to report. Elaine is very cautious when discussing what goes on in her home. Elaine's goal is to drop out of school as soon as possible because school "does not meet any of her needs and is boring." Teachers report that Elaine's home schooling background has caused difficulties in her ability to succeed in public school.

Bonnie

Bonnie is a 13-year-old with a sharp tongue and unkempt appearance. She is only one of two female adolescents in the group who does not wear makeup and talk about her desire for a boyfriend. She consistently complains about her mother's boyfriend verbally abusing her and threatening to physically abuse her, even in front of her mother. Bonnie reports that her mother sides with her boyfriend. She states that she feels sorry for her mother because of the way her boyfriend treats her. She states much too frequently that she is "so glad that she and her mother get along so well," and that she "feels sorry for the other kids in the group because they don't get along with their parents." Bonnie repeatedly states that she doesn't have any problems and allows herself to feel hostility only toward her mother's boyfriend. Bonnie's goal is to become a veterinarian.

Mary

Mary, 13, is a fully physically developed female whose low socioeconomic family has moved from one temporary housing site to another. Her mother has been living with a man of another race for two years, who died of cancer during the course of the group. Mary said on the day of his death that she "didn't feel anything, I just want to have some fun." Her core teacher wishes Mary would be more "ladylike," and thinks that is her greatest problem. Mary's goal is to have enough money to buy some clothes that she likes.

Polly

Polly is an unusually attractive 14-year-old who wears a great deal of makeup and is exceptional in dramatic roles in community theater presentations. She repeatedly states that she has "no problems" and wants to be the person in the group who helps everyone else with theirs. She actively exhibits this desire and must be persuaded that this is not her role in this group. As other students express their problems and successes, she gradually becomes courageous enough to share that she feels that she is the family scapegoat and that her alcoholic mother refers to her as the "family whore," complaining "why can't you be like your sister?" Polly states that she has a low rate of sexual activity and feels that her mother is concerned that she will be like she was at her age (very sexually promiscuous). Polly also reports that she is continuously afraid that her dad will "slap her around." Polly's mother visited with the school principal and superintendent and stated that, although she had wanted Polly to be enrolled in the group, she felt now that Polly had "no business being around kids who were bad influences because they have so many problems." Polly's teachers state that she is bright and does not apply her abilities to her work. Polly's goal is to excel in theater.

Tricia

Tricia is an attractive 13-year-old who is mostly interested in boys. She experiences problems with school authorities for smoking on school grounds, tardiness, and her grades. She seldom attends school or the self-esteem class.

Connie

Connie, 14, has a teacher who referred her to the group because he feels she has excellent potential, but does not apply herself to her school work. His perception is that "she chooses the peer group that will get her into trouble." The teacher is pleased that he was able to persuade her to try out for the basketball team and to be successful in that attempt. Connie is a "giggler" and reported that she has tried various drugs and is not now using them, although she occasionally drinks alcohol. She is sexually active. She reports that her parents do not listen to her and constantly argue loudly in front of her. Her family is upper middle class, and she describes them as "totally focused on religion." Connie's goal is to have the boyfriend she wants.

General characteristics of the students

The students described above have physical appearances similar to other students their age. They are of a variety of ethnic and socioeconomic backgrounds. Some have been classified as having learning disabilities or mild mental retardation. One student in this project was determined to have a legal, severe hearing impairment. Many of the "primary" handicapping conditions were actually secondary to painful emotional overlays. Such students present a variety of "behavior problems" to school personnel. The principal adults in their lives, their parents, have provided for these students to some degree since they were infants. They are the same individuals who tell the children that they love them while frequently abusing them physically, emotionally, verbally, and/or sexually. The students generally feel unlovable and undeserving. Because they are accustomed to abuse and typically feel that it is their fault, their common modus operandi is to set themselves up with abusive peer and other relationships.

They generally exhibit a feeling of inferiority which is frequently unconsciously reacted to by society, including school personnel. For example, sometimes school staff encourage them to find tasks that are "less difficult–more at their level." Their glasses are generally viewed by society as being half empty rather than half full. These students desperately want friends and they want to be "like everyone else." Drugs, alcohol, and sexual relations are frequently used as relief from the reality of their lives.

They are often absent from school, partly because they feel that school is boring and doesn't meet their needs. Many have physical ailments that "come and go." Many of the students are not noticed by the schools or they are noticed because they are "behavior problems." Most school personnel have not been trained to recognize many of the nuances of the behavior of abused children and sometimes feel that the behaviors are totally the child's fault, that the child is a "trouble maker," etc. Many school employees simply do not want to see the extent of the problem because they have not been trained to deal with it and the solutions are not simple.

Most of the students operate in a "victim mode." Accustomed to being victimized at home, they have a very low level of hope that the future could be any different. They usually have inadequate support systems (including overburdened child protective service systems), and a belief that they deserve what has happened to them. Thus, they continue to see themselves as victims--at best, frequently complaining about the state of their lives; at worst, simply programming themselves for more and more disappointments and victimization.

Critical nature of the problem in America

The case studies in this article are typical of far too many students across the U.S. There are *already* several million children who are represented by the above case studies or by worse scenarios (e.g., juvenile incarceration or suicide). It is no longer the atypical student who is sexually active, dreams of dropping out of school, and has used or is using drugs and alcohol. Abusive homes and parents are common in our society. It is now unusual for American children to grow up in a two-parent household. Children now make up the largest segment of America's poor population (Taylor, 1989). The media promulgation of violence and of sexual activity without commitment also contributes to the development of at-risk students.

According to the 1987 report of the Committee for Economic Development, to the extent that our society has so rapidly changed that the rules and structures most of us fondly remember no longer exist, all children are at risk (Hamburg, 1987). "At-risk" students have been defined by the Council of Chief State School Officers (CCSSO) as students who are not likely to successfully complete high school (Olson, 1987). A substantial proportion of such children are from low income families or do not speak or comprehend the English language. At a minimum, a vast number of students are at risk of not living up to their potential.

In a society in which at-risk students are a rapidly growing population, it is of critical concern that the social institutions ostensibly designed to protect children from abuse and neglect are overwhelmed with referrals. It is not uncommon for a child protective services agency in our country to tell a person calling in a complaint that unless the child's life is in immediate danger (e.g., parental physical abuse, or a suicide attempt), or the child is being sexually abused and the fact can immediately be proven, that a case worker will get to the child "as soon as possible."

It is absolutely imperative to acknowledge that this is the school's and society's responsibility. The American family breakdown has already occurred. Our society has designated schools as the educational authority for children up to 8-1/2 hours a day. Schools have become responsible for education, socialization, and teaching citizenship. Schools must be more than "warehouses." They must lead social change efforts and not merely reflect the radical societal changes that have occurred.

The vast majority of school personnel desire the best possible education for all children. Yet administrators, teachers, and related services personnel are generally not trained to adequately deal with the emotional overlays of at-risk students. Many school personnel are not fully aware that children who are emotionally scared are unable to learn until their needs are holistically addressed. Educational personnel who are not trained regarding how to appropriately address student needs and involve their families and related community groups will typically hesitate to do so. Besides the fact that at-risk students such as those described above carry life-long scars even when they receive counseling or other treatment, the social dangers of not providing assistance to such students is staggering.

One in six babies born in the United States today is born to a teenage mother. Ninety-six percent of these mothers keep their babies (Hamburg, 1987). The hopelessness and the lack of control of their own lives felt by children such as those in the case studies above are key variables. Social dangers include school dropouts becoming dependent on welfare, and the creation of violent gangs, street people, and drug and alcohol abuse and addiction. The cycle of these social problems is quite vicious. School dropouts, teen parents, and abused children contribute to continued cycles of child abuse, addiction to alcohol and drugs, teen pregnancy, and school dropouts.

Eighty-five percent of America's workforce by the year 2000 will be composed of women, minorities, and immigrants (Taylor, 1989). The economic competitiveness of our country depends on trained, educated employees. With one out of four students in the U.S. dropping out of school, we are at a crisis point for businesses having an adequate supply of trained, educated employees and for America having educated voters (Taylor, 1989).

At-risk students in rural America

There are many ways that, as a result of a disability and/or environmental conditions, rural children are placed at-risk for learning. Rural areas typically have disproportionate percentages of students from poor families, and many rural communities are composed of Hispanic migrants and other non-English-speaking populations. Significant rural populations are also composed of minorities--e.g., those located in Southern Black communities and on Native American reservations.

More than 25% of all high school seniors across the U.S. do not graduate, and many who do need remedial reading and writing courses (Olson, 1987). The statistics are even more grim in rural areas. Whereas one in four American children under the age of six years is living below the poverty line, in rural areas, 30% of the farm population and 24% of the non-farm population are living in poverty. Rural U.S. citizens are twice as likely as non-rural citizens to be poor (Brown, 1989; National Rural Studies Committee, 1989; O'Connor, 1986), and fewer services are available for at-risk students in rural areas.

The prevalency of at-risk students in rural areas is quite high. For example, the Department of Education in the rural state of Wyoming stated that as many as half of the state's children could be classified as at-risk in terms of their potential for dropping out, suicide, drug addiction, abuse, crime, pregnancy, or illiteracy (Wyoming Department of Education, 1987).

The serious nature of this problem is reflected in the fact that two-thirds (67%) of all schools in the United States are in rural areas, and the majority of unserved and underserved children are located in rural America (Helge, 1984). Problems traditionally associated with implementing comprehensive special education programs in urban areas are compounded in rural areas. Vast land areas, scattered populations, and inadequate services are obstacles to program development, particularly when highly trained personnel and specialized facilities and equipment are required. The isolation of many rural areas, especially those in remote locations with sparse populations, creates conditions favorable to the creation of at-risk children. For example, the lack of services with a preventive emphasis is a key variable.

Rural culture is also a factor. Citizens in small communities essentially "live with" their neighbors. They frequently see them in the grocery store and the post office. A family member may be employed by an alcoholic who neglects his children or is a suspected child abuser. Particularly if the community has inadequate preventive services (those that inform the community of what to watch for and how to successfully--even anonymously--intervene), many citizens may decline to "get involved."

Many factors contributing to at-risk youth are more prevalent in rural areas. E.g., the chances of youth violent death are much higher in parts of the rural West. In some western counties, rates for white males are 13% higher than for poor inner-city youth. Reasons include isolation, high unemployment, absence of extended family, and easy access to firearms. Frank Pauper of Rutgers University believes that the western macho culture is so prevalent that youth feel they must drink, fight, and take physical risks (*USA Today*, November 11, 1987). The increase in youth suicide is related to divorce, poverty, moving, loss of a loved one, and to academic pressures.

Most rural students are confronted with the limited entertainment available in their local community, yet the mass media continuously announces that an unlimited number of exciting options should exist. Thus, it is understandable that alternatives such as illegal drugs, alcohol, and sex frequently become exciting, regular alternatives.

Conditions associated with at-risk students

The at-risk condition is related to multiple societal, environmental, and personality factors. Societal characteristics include violence including in the mass media, the breakdown of the American family, the encouragement of physical punishment, racial discrimination, lack of willingness to be involved (e.g., not "recognizing" child abuse), and inadequate parenting models. Institutional factors include gaps in services offered by community agencies, inadequate numbers and qualifications of child protective services workers, deficiencies in the foster care system, resistance to interagency collaboration, and competition among agencies for service delivery. An additional institutional factor is that educational personnel are typically not trained or encouraged to holistically meet the needs of at-risk students. Environmental factors include poverty, unemployment, and dysfunctional family relationships. Personality factors include rigid thought patterns, growing up in a dysfunctional family system, extreme feelings of inadequacy, and high control needs combined with low control situations. The characteristics listed in Table I are most frequently associated with children being at-risk for needing special help.

At-risk students typically are involved with one or more of the above conditions. These conditions are becoming more prevalent and are frequently related to one another. They are correlated with broad social changes across America, including the growing number of dysfunctional families in the U.S. Rural poverty caused by the economic crises of various farm, gas, oil, and wood industries has also contributed. Many at-risk situations are directly related to increased alcohol and drug use in this country. In most rural communities, it is now commonly accepted that a developmental task faced by all adolescents is to come to terms with alcohol, drugs, and sex.

The use of alcohol and drugs during school hours has become common. The major factors related to adolescent drinking and drug use are peer pressure, peer approval, and low self-esteem. The greatest amount of peer pressure is typically applied on school grounds.

Table I

Characteristics Associated With At-Risk Students

Substance abuse
Involvement with crime
Suicide attempt/depression/low self-esteem
Child abuse (physical, emotional, verbal, and/or sexual)
Poverty
Child of alcoholic or substance abuser
Child in a dysfunctional family system
Illiteracy/English as a second language
Migrant
Handicapping condition
School dropout
Sexually active/pregnant
Minority and poor
Health problem
Performance significantly below one's potential
Residence in a rural/remote area

Problems are frequently cyclical or are at least compounded. For example, it is well known that children of untreated alcoholics are likely to become alcoholics, teenage mothers are the least likely to receive prenatal care, and the most likely to produce offspring who become teen parents and/or have a disability. Young men and women age 15-18 are in the highest risk group for sexually transmitted diseases (Shalwitz, 1988). The main barriers to teen health care are that it tends to be unaffordable, inaccessible, or inappropriate to the specific needs of adolescents (CDF Reports, 1984). Sexually active teens are at an especially high risk of contracting sexually transmitted diseases or other health-related problems.

Critical factors in adolescent development include the development of coping skills and dealing with issues of identity, self-esteem, and self-image. Adolescence is also a time of resolving issues of dependence and independence. These issues are difficult enough under normal circumstances, but become unduly complicated when the adolescent becomes involved with one of the factors in Table I.

Community services are inadequate even in large urban areas (CDF Reports, 1984). Rural areas typically lack programs concerning family planning, anonymous pregnancy testing, and supportive efforts for pregnant and parenting teens. Many rural communities such as Appalachia and part of the Midwest farm belt accept and even expect earlier marriages and younger ages of childbirth.

A host of new health trends collectively known as the "new morbidity" are threatening a growing number of teens. These trends include problems with social rather than biological roots, such as alcohol or drug abuse, school dropouts, teen pregnancy and sexually transmitted diseases, violent behavior, suicide, and other health problems. A number of these conditions now are leading causes of death or disability among American youths (CDF Reports, 1984).

Compounding teenage health care problems is the remarkably low utilization of health care services. Teens who do use health services often find that providers are not prepared to deal with their special needs for guidance and structure. Yet health problems tend to be more common among low income teens, in part because conditions are more likely to be untreated or even undetected during childhood.

Community mental health resources are also inadequate in rural America, and the comprehensive roles of school psychologists are frequently misunderstood in rural schools. Qualified rural school psychologists are difficult to recruit and retain, frequently unaffordable for rural schools, and are not well used by school systems and parents. The majority of rural schools do not employ school counselors, largely for financial reasons (Helge, 1985).

Child abuse is a much more serious problem than recognized by most U.S. citizens. The National Center on Child Abuse and Neglect estimates that over one million children are maltreated by their parents each year. As many as 100,000 to 200,000 of these children are physically abused, 60,000 to 100,000 are sexually abused, and the remainder are neglected (Winters, 1985).

For children one to five years of age, abuse is second only to accidents as the cause of death. National studies on prison populations indicate that 80-90% of the inmates have been abused as children. Experts estimate that as many as one out of every four girls and boys have experienced some form of sexual abuse. These figures are shocking, but even more shocking is the fact that for every case of child abuse reported, two more go unreported. Child abuse and neglect occur in every segment of our society–poor, rich, uneducated, and highly educated (Winters, 1985). For the reasons reported earlier, it is often more prevalent in rural than in non-rural areas.

Policy implications

The complex social factors involved in the creation of at-risk children require social change as well as classroom intervention. The CCSSO recognized this and adopted a proposal calling on states to "guarantee" a high quality precollegiate education to those students deemed least likely to finish high school. This is evidence of the complexity of the factors involved in the at-risk situation. Among the eleven "guarantees" for at-risk students in the CCSSO policy statement is the right to attend a school with a demonstrated record of "substantial and sustained" student progress.

The existence of a disability makes graduation even more difficult (Viadero, 1989) as does residence in a rural area. The private sector, elected officials, and the wider citizenry are clearly recognizing that without success for all children, our standard of living in the United States will significantly decline. This is an important new incentive for effective programming for at-risk children.

The CCSSO concluded that any effective strategy for helping at-risk students will require a team effort on the part of state agencies, business and industry, communities, schools, and parents. More program emphasis should also be placed on prevention and early intervention, and these efforts should be generic, rather than focusing on a single risk, such as substance abuse. The CCSSO report also stated that nontraditional educational arrangements should be encouraged for at-risk children and youth (Olson, 1987).

The emphasis must be on at-risk students developing self-esteem and leading useful lives--a "directional" versus "correctional" approach. All types of educational personnel must be trained and encouraged to holistically address the needs of at-risk students.

Figure 1 indicates preventive and treatment factors that will assist at-risk students. Social change, such as that recommended by the CCSSO, must be simultaneous with classroom, counseling, and parental involvement efforts. Such an approach will assist students in developing self-respect, motivation, a strong sense of identity and control over their own lives, and responsibility for their own actions.

Preventive and treatment factors to assist rural at-risk students

1. Social change

Social changes should be planned and must recognize the inherent factors in a given rural community. An example would be working with parents and initiating alternative entertainment in a mining or logging camp with a high rate of adult alcoholism and heavy teenage drinking. High school graduates who are successfully farming could be invited to speak to students in a neighboring community where most adults did not complete high school and unsuccessfully continued family farming traditions. Similarly, it would be wise to work with local leaders to have them initiate sex education in a highly conservative community that did not perceive the relationship between teenage pregnancy and lack of sex education. The inherent attributes of any rural community will be both positive and negative, and should be recognized and used. For example, the fact that rural citizens generally know each other and are aware of local happenings could inhibit the courage of a local citizen to become the local "sex educator." It could also increase accountability of curriculum content.

2. Policy change/development

In most instances, there will be no formal policy regarding social problems which contribute to the development of at-risk students. As with social change, it will be best to encourage locally respected citizens to initiate the development or change of policy. In the event that a policy exists, but is obsolete or inappropriate, the challenge will be to

Figure 1

Preventive and Treatment Factors to Assist Rural At-Risk Students

Inputs

Social change, recognizing local rural cultures

Policy change/development

Preservice education

Inservice education

Community-business-school partnerships

Intra-school efforts
life
    Problem recognition
    Development of school policies (with community participation)
systems
    Interdisciplinary, holistic intervention approaches
    Assessment
    Emphasis on self-esteem enhancement
    Vocational education
    Counseling
    Transition programs
    Family involvement

Lead to:

Community mental health services
Prevention
Treatment

Comprehensive health services
Prevention
Treatment

Student Products

Healthy self-esteem

Self-nurturing

Sense of identity

Internal motivation

Sense of responsibility for actions

Control over one's own

Ability to find appropriate external support

motivate local policymakers. Motivation is initiated by discomfort with an existing situation and a realistic expectation that the situation can be improved. It may come from increasing community awareness of social problems, expectations for performance within that community, and/or discomfort with current situations.

3. Appropriate preservice education

Preservice efforts must include education about all of the factors in Table I and in Figure 1. It should emphasize the development of student self-esteem as a preventive and intervention mode. The implications of the factors in Figure 1 for the rural community and how social and policy changes occur in rural America must be understood. This type of education will also assist with the recruitment and retention of qualified rural educators. Educators and related services personnel of all types must be trained to address the emotional needs of at-risk students. Often, intervention regarding a "primary" disability can best occur via addressing the "secondary" disability, the emotional overlay. There must be an understanding that students with serious emotional difficulties are generally unable to focus on learning.

4. Appropriate inservice education

The first priority must be the immediate welfare of the student. Teachers, related services personnel, school board members, administrators, and others must understand that the worst thing they can do is to ignore a student's problem. Each person attending inservice must be encouraged to take their knowledge back to other personnel in the school and to parents. The content should include all of the factors in Table I and Figure 1. Inservice time should emphasize processes of enhancing student self-esteem and include methods of developing interdisciplinary assessment and intervention teams. Teachers and related services personnel should be trained to work with families, community agencies, and with students regarding the emotional needs of at-risk students.

5. Community-business-school partnerships

It is essential that the community, including parents, social agencies, businesses, and civic and volunteer organizations, be involved. Rural resources are simply too scarce to attempt to deal with problems in isolation. All community resources are required to handle social problems such as those involved with at-risk conditions. It is important that all techniques involving community elements preserve student confidentiality.

Vocational education is frequently a "missing element" in effective programming and is an essential element in dropout prevention (National Center for Research in Vocational Education, 1989). Thus, school-business-community partnerships are imperative.

6. Family involvement

Parents are an essential resource in program planning and implementation. They can approach other parents, community groups, and school employees. Siblings can often reach students who will not listen to anyone else. In some cases, families will be in denial (e.g., alcoholism, substance abuse, or attempted suicide). In such cases, the school and community must help parents understand that denial is, in essence, condoning behavior and allowing it to continue to the detriment of the student. It is especially critical to involve parents of students in dysfunctional family situations if at all possible. Frequently, rural family members will listen to their peers (e.g., neighbors, cooperative extension workers, or extended family members) more easily than they will to school personnel. Thus, all natural outreach agencies or unique rural resources should be involved (e.g., mail carriers, grange organizations, 4-H clubs, natural community communicators, cooperative extension, public health workers, etc.).

7. Community education

It is essential that the community be educated regarding all of the factors in at-risk situations. This will assure that many such situations will not recur and will help in ameliorating the current conditions. Community education might occur via town meetings, newspaper articles, presentations at local Welcome Wagons, Garden Clubs, 4-H meetings, or county fairs. Advanced technologies can be used such as satellite training or informational programs regarding recognizing and dealing with factors such as child abuse.

8. Intra-school efforts

These efforts will include problem recognition, development of school policies, interdisciplinary approaches for assessment and intervention, vocational education, and comprehensive transition and counseling programs. Families and other community members should assist with design as well as implementation of programs.

For example, teachers must learn to deal with the more covert/difficult situations such as knowing when students' actions are affected by alcohol or drug use. This might include students whose long-term use of drugs or alcohol has left them without motivation for learning, or students who are so depressed that they are simply biding time until the school drops them, they quit school, or they attempt suicide. Symptoms such as high absenteeism, frequent tardiness, amotivational syndrome, manipulative behavior, mood swings, and denial must be dealt with even though they are difficult. To follow a student's lead and buy into the denial of students' parents or other teachers is to condone this behavior and allow it to continue to the detriment of the student and the general school community.

An effective student assistance program should be established in which teachers and related professionals become part of an assessment team that looks at the behavior of students who are having difficulty in school. Health, absenteeism, change in performance, and classroom conduct are among the behaviors that should be evaluated. School personnel must be trained and supported regarding recognizing and reporting child abuse.

Assessment processes should be completed by the student's teachers, counselor, nurse, other related services personnel, administrator, and parents (when possible). This gives the assessment team a tool with which to evaluate the student. This information will more readily enable the school to address with parents the issues involved in the at-risk situation. This type of confrontation or intervention will be helpful in breaking through both parent and student denial.

Self-esteem enhancement must be emphasized. Students must be supported. Teachers and related services personnel must be adequately trained and supported as they holistically address student needs, and work with families and community agencies. The administration and school board must adopt a strong policy and set guidelines for addressing at-risk conditions such as low self-esteem, poverty, illiteracy (or English as a second language), active teenage sexuality, substance abuse, and crime. It must also be recognized that just as an alcoholic or addict moves through the phases of transition--denial, anger, bargaining, and depression--before reaching acceptance, so do teachers, counselors, administrators, and parents. Efforts must be persistent and encouragement must be offered, recognizing that at-risk conditions will not go away as long as schools are trapped in denial.

9. Community mental health services

As mentioned previously, rural areas typically have inadequate community mental health services. Efforts must be made to upgrade the preventive and treatment aspects of such services. In addition, in remote areas and others lacking such services, advanced technologies or other methods of expanding services available in the region must be made. This may include a circuit-rider system of mobile/itinerant personnel or the use of alternate transportation to take clients to services (e.g., private pilots or the use of the transportation systems of regional businesses). Use of existing rural outreach systems (e.g., cooperative extension workers, bookmobiles, or public health workers) would be consistent with local community values and potentially helpful.

10. Comprehensive community health services

These services must also be upgraded to include prevention as well as treatment. This means that services for children of alcoholics, students with low self-esteem, students with previous experience with alcohol and drugs, and sexually active teenagers must have preventive aspects. Pregnant teenagers, alcoholics and substance abusers, students who attempted suicide or experienced severe depression, juvenile delinquents, dropouts, and students with sexually transmitted diseases, must also be serviced via a treatment mode. Self-esteem education is the critical prevention and treatment variable for at-risk students. Students are frequently told they will not succeed, in subtle and/or direct ways, at home and at school. Their psyches must be strong enough to cope with whatever dysfunctional circumstances are part of their lives, and to assertively plan a positive future for themselves.

Conclusions

As social changes occur, the number of students at-risk is increasing. Systematic approaches of preventing and ameliorating at-risk situations are essential and will save social anguish and tax dollars. Appropriate preservice and inservice education, community-business-school partnerships, family involvement, and community education must complement intra-school approaches of working with at-risk students. Community health and mental health services must also be upgraded so that the needs of rural students are addressed. These approaches must be designed after considering the contexts of specific rural communities.

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Rural Students with Special Needs:
The Cultural Context of Policy in Practice

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Running Head: CULTURE AND POLICY

Rural Students with Special Needs:
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Abstract

This article focuses on the implementation of special education policy for rural students with disabilities who attend school in poor school districts. The discussion is based on the results of a qualitative field study. A constant comparative method of single and cross-site analysis revealed barriers to policy implementation in a rural, disadvantaged context. These implementation barriers included shortage of personnel, inadequate funding, lack of positive service examples, urban emulation, and weak political influence of poor families. CULTURAL DIFFERENCE, POLICY, POVERTY AND DISABILITIES

Rural Students with Special Needs:

The Cultural Context of Policy in Practice

Systems theory has acknowledged the interactive relationship between an organization and its environment (Easton 1965). While the strength of environmental influences on organizational behavior has been debated through organizational ecology theory (Meyer 1978), theorists generally agree that organizational presence is dependent on this environmental relationship (Aldrich 1979, Pfeffer 1982). Interdependent relationships within the organizational system (Thompson 1967), whether or not demonstrating direct causality in their educational applications (Weick 1976), determine the functions of the school as an organization. Giving attention to community elements in the environment has led to the inclusion of cultural considerations in social systems theory (Getzels, Lipham and Campbell 1968, Getzels and Thelen 1969), and viewing the school as a social system, has provoked further reflection of the impact of culture on student learning (Getzels 1978).

The current educational agenda of the nation reflects considerable concern for the increasing proportion of children from minority groups, for the growing number of children from households below the poverty line, and for the cultural considerations needed to provide an appropriate education for all students (National Coalition of Advocates for Students 1988). A whole day study of Chapter I students (Rowan and Guthrie 1986), and curriculum and procedural adaptations for culturally diverse students with special needs (Ramirez and Ortiz 1988) have been documented. However, no recent studies have recognized the concern for students who in addition to being members of social and familial situations which place them at risk for educational failure, have intensive learning needs which are exacerbated by the school and community context of their education. Research is needed which examines the cultural appropriateness of educational policy, by exploring the daily activities of students within organizational and environmental contexts.

Conceptual Framework

The impact of policy traditionally has been examined in hierarchical fashion from top (maker) to bottom (implementor). However, Lipsky (1976, 1980) challenged this traditional approach to policy analysis by arguing that services prescribed by policy were circumscribed by the actions of the implementor when meeting the needs of those who were the target of policy, thus creating new policy. Weatherley and Lipsky (1977) asserted:

> Now the lowest levels of the policy chain are regarded as the makers of policy and the higher level of decision making is seen as circumscribing . . . the lower-level policy making context. The relationship between the development and implementation of policy is of necessity problematic since, in a sense, the meaning of policy cannot be known until it is worked out in practice at the street level (p. 173).

The local adaptation of special education policy by the implementor, or "street-level bureaucrat", was necessary to manage the conflict which resulted when attempting to meet the individual needs of all children as the policy required. The unit of analysis in street-level bureaucracy theory is the interaction between the local implementors and the target of policy focusing specifically on administrative procedures. The initial writings were generated from research in urban, low socioeconomic class settings (Lipsky 1976). In the application of street-level bureaucracy theory to special education policy (Weatherley 1979, Weatherley and Lipsky 1977) the context of policy was construed as the history of related policy and procedures. Weatherley (1979) briefly considered procedural issues with the urban poor. But the social context of policy was not the focus of the investigation and it did not include nonurban settings.

This study ascertained that the meaning of educational policy and the context of its application in rural settings could be further understood when Weatherley and Lipsky's (1977) model of policy implementation was extended one more level: from the street-level bureaucrat providing the service, down to the person receiving the services. The student focus of the study, and the concomitant investigation of local level implementation in a disadvantaged context was able to depict the social context of daily school life which is not considered in current policy, and which is absent from compliance reports, program descriptions and traditional special education research.

Purpose of The Study

This exploratory, descriptive study demonstrated how the whole day experiences of rural students with intensive learning needs were shaped by the interrelationships among the community, the school, the special education program and the implementation of special education policy. The study's focus on the content of the student's day addressed, in part, how issues within the context surrounding the day, may have shaped the child's school experience. Questions which guided the study included the following: What does the rural student with severe disabilities do in her school day? How does the content of the day compare among rural areas given that federal and state policy implementation was required to be universal? What issues were apparent in the rural school and community environments, which may have shaped the implementation of policy? How may have the historical process of implementing special education policy for the student in this context, influenced the content of the student's day?

These questions both guided the data collection and subsequent primary and secondary analyses of the data.

The analyses and discussions have included a focus on the students' days (Capper, in press), the decisions and actions of rural administrators and the concomitant role of students in policy making (Capper, n.d.[a]), and a comparative analysis between state and district policy implementation in poor, rural settings (Capper, n.d.[b]). This manuscript specifically addresses aspects of the rural poverty context which influenced policy implementation.

Methodology

Three students with severe disabilities were selected from three rural school districts in the United States, based on principles of multi-site policy research (Firestone and Herriott 1984), and on Spradley's (1980) criteria for selecting a social situation to conduct participant-observation, including accessibility and permissibleness. The rural school districts met Helge's (1984) definition of rural and had characteristics indicative of poverty. All three students lived in families who had no sources of income other than public assistance (see Table 1).

Insert Table 1 about here

The study took place over the 1987-88 school year and was guided by qualitative research methodology (Schatzman and Strauss 1973). Participant-observation (Edgerton 1984) and informal interviews (Spradley 1979) were the primary methods of measurement. Continuous recording of observation notes occurred throughout the students' entire school day, from the time they boarded the bus, to the point of their departure after school. The Student Observation Instrument recorded the following domains: (a) the activity; (b) the time an activity began and ended; (c) instructional materials; (d) observation notes, including, skill area, objective of the activity, person responsible for the teaching, adult/child ratio and groupings, developmental and chronological age ranges of the groups; (e) theoretical notes; (f) methodological notes; (g) ideas; and (h) analytic memos. Student records were copied and debriefing interviews were informally held with participants prior to leaving the observation day.

Corroborative information (Stainback and Stainback 1981) from the school and community was obtained through observation, demographic data questionnaires, document analysis, and interviewing the special education coordinator, the special education teacher, the principal, the parents, and a community informant, during pre-and post-observation days. Documents included a) community newspapers, b) district special education handbook, c) school handbook for both faculty and students, d) teacher schedules, and e) student due process records.

The four stages of the constant comparative method (Glaser and Strauss 1967) of single and cross-site qualitative data analysis (Barton and Lazarsfeld 1969) was utilized. One of the first steps in the analysis process was describing "classes" of data. All field notes and documents were read and notes were written verbatim on index cards. The cards were numerically coded by district and information source. After many cards were coded, the data did lend themselves to particular domains of information and were tentatively labeled. Theoretical notes were written and coded. The analysis did not confine itself to straight description

(Schatzman and Strauss 1973) based on the components and procedures of Public Law 94-142 (The Education for All Handicapped Act of 1975). While some of these categories and procedures naturally emerged in the analysis, they were not inclusive or preconceived. Themes were identified which characterized the activities of the students in their school day, and the issues in the context of the students' days which may have shaped their daily educational reality.

Three ways of increasing the validity of the findings were multiple sources of evidence, chain of evidence, and investigator triangulation (Stainback and Stainback 1981, Yin 1984). Methods for assuring reliability included documenting the specific procedures in conducting the case (Lagrow and Prochnow-Lagrow 1983, Yin 1984), creating a case study data base (Yin 1984), and recording both objective notes and subjective ideas (Schatzman and Strauss 1973). Previous to this research, the investigator was a special education professional for five years, in a rural, disadvantaged school district located in close proximity to the selected school districts. Thus, although the researcher was unacquainted with the specific students in the selected districts, the researcher was familiar with the sociocultural context of the investigation which increased observer reliability (Repp, Nieminen, Olinger, and Brusca 1988). The three students selected for this study cannot be considered representative of all poor, rural students with severe disabilities, nor the selected school districts considered representative of all rural districts within disadvantaged communities. The study also does not pretend to be an in-depth ethnography, typically the result of years of study. The training and experience of the researcher in this setting was critical for obtaining reliable data over a shorter time period.

Findings

Several patterns emerged in the study which shaped the school day and exacerbated efforts to serve poor students with severe disabilities in a rural setting. These patterns included (a) a shortage of expert personnel, (b) inadequate funding, (c) the lack of positive examples of service delivery which decreased student expectations, (d) the emulation urban service delivery models which overlooked needs and resources unique to the rural context and (e) the weak influence poor families had on behalf of their children with disabilities.

Shortage of Expert Personnel

The lack of certified personnel was cited by one administrator as "the worst problem" plaguing less affluent, rural districts in meeting the demands of the mandate. Recruitment of teachers certified to work with students with moderate to severe disabilities affected the days for the students in three unique yet related ways. For Elizabeth, her teacher was emergency certified and had no courses in teaching students with moderate to severe handicaps. She freely admitted: "I don't know what to do with [Elizabeth]. I have to teach the others. I've got parents on my back."

For Tiffany, her district did not have teachers for students labeled severely/profoundly handicapped (S/PH) at the high school level. The district also employed only one teacher for the S/PH at the elementary level, who was placed in a school at the far end of the county away from Tiffany's home. Thus, Tiffany was placed in a middle school-level program and would remain there until the end of her eligibility for special services. Tiffany's mother was concerned about Tiffany's progress, but could not hope for a different teacher the next year.

Roseann had only been in school 2 years. However, thus far, she had a new teacher each year. In her first year of school, her teacher was not certified. Her second year, she had a certified teacher, but that teacher was unsure how long she wanted to teach in that geographic area. Roseann's mother noted that the teacher made a great difference in Roseann's progress saying, ". . . last year, it seemed like her teacher wasn't that interested in the kids. . . it seems like she was going backwards." Thus, teacher turnover could play havoc with the consistency needed for Roseann to make progress.

Inadequate Funding

The rural school administrators agreed that funding inadequacies were the most pervasive problem impairing their ability to serve rural students with special needs, and that additional funding could help them lure qualified personnel into the area. The administrators felt urban districts received more than their fair share of resources, especially in the allocation of state special education units to the districts to pay teachers' salaries. (A special education "unit" consisted of salary for one teacher.) If the state did not provide the funding for the unit, support for that teacher's salary came totally from local funds. The previous year, one district had requested 24 units of stat funding, but received only 21 units. The state expected the local district to pay for the other three units. However, the local district, struggling financially, did not allocate funds to pay for the other three units of salary. As a result, approximately 30 students, who would have received services remained unserved. A second district requested 28 units of state funding, but received only one unit. This same administrator reported that an urban county one third their size had received 82 units.

Lack of Positive Service Examples

Urban and more affluent rural districts may provide a more comprehensive array of services for students with severe disabilities, not because they have more resources, but because of their ability to interact with other social service agencies and in many cases urban-based university programs which provide positive examples of serving this population. These positive service examples subsequently can lead to the development of higher expectations for the potential of these students, and the urban districts can then develop services and programs to meet these expectations.

These rural districts were located over 3 hours from a university training program and urban services and they were financially less able to provide inservice opportunities. All the student records in the study indicated they had been labeled as essentially unable to learn, which lowered teacher expectations. For example even though Tiffany's classroom was designated for students labeled moderately handicapped, her teacher perceived them as having severe handicaps, and thus, not likely to be trained. He had recently received his first in-service experience, sponsored by a university program, and noted:

> . . . I thought my kids were severely handicapped until I went to this <inservice> training. . . They're not. . . They are trainable. . . like Tiffany is ambulatory. . . she actually has a lot of communication. . . like those kids I see at this training. . . many only have eye gaze as the only way to communicate their needs. . . this training has opened up a whole new world for me. .

Urban Emulation

The administrators in this study went to great lengths to meet the requirements of P.L. 94-142 by emulating the service deliver models used in urban areas. Urban models historically have operated under the assumption that grouping students with special learning needs was somehow more effective. It was relatively easy for urban districts to experiment with this model, since sufficient numbers of such students could usually be found in the larger schools. Thus grouping of students became the norm. The rural districts scrambled to implement this urban model by developing an entirely new and separate transportation system and setting aside separate space for the students. Special buses were purchased, drivers and bus aides were hired, and additional space was created within the existing school, or with the addition of a separate modular unit outside the building. It was not determined whether student grouping was truly cost-effective. More importantly, it was not determined if students were truly gaining more in their education by being bussed across the county to a classroom with other students with special needs.

In attempting to provide special equipment and services for students with intensive learning needs, these rural school administrators neglected to furnish them with the materials and services available to all other students. Adequate materials, qualified teachers, access to information about the school for parents, and opportunities to interact with other students represent just a few of the components of a non-disabled student's school experience. Administrators did not consider what educational opportunities were currently available for all students in their districts and did not ensure that, as a beginning, students with severe disabilities were provided these same opportunities.

Weak Political Power of Poor Families

Weatherley's (1979) study of a state special education reform process in three urban school districts found that disparities among school districts in meeting the needs of students with special needs were directly related to the wealth of the states and school districts. Additional points he emphasized relative to socioeconomic class and policy included (a) parent and advocacy groups were concentrated in urban settings and are comprised predominantly of middle-class professional families; and (b) due process and appeal procedures were used most often by affluent families, and school personnel followed the procedures more closely if the parent was more wealthy.

Elizabeth's family had the temporary support of an attorney to get her enrolled in school, and Tiffany's mother threatened to call a child advocate if the school would not provide a full day of instruction for Tiffany. However, even though the parents expressed concern about their child's program, these families did not challenge the implementation of P.L. 94-142, and the resulting school day for their children. Other, more affluent families in the district did obtain the services of a child advocate, however, the advocate benefitted only the child who was directly represented and negatively affected the days of the students in the study.

For example, for Elizabeth, the absence of the advocate's support meant she did not receive speech therapy, but other students with less severe speech problems in her classroom, who had advocate support, received speech services. In Tiffany's district, a student with very similar learning needs, who attended another school in the district and had legal representation, received one-to-one training her entire school day with an appropriately certified teacher, and, in addition, received a complete summer program. For Roseann, it meant she did not receive speech because "no therapist is available" as was stated on her IEP. Yet, in Roseann's classroom, two students with advocates received speech therapy. Interviews revealed the district employed three full-time therapists and contracted with five additional therapists for speech services.

Summary

From its inception, P.L. 94-142 was designed to meet the needs of all students with disabilities, regardless of geographic location or socioeconomic status. This research highlights the discrepancy between policy intent and practice with persons who have in general, been excluded from the research and literature. Results of the study suggested that state level educational governance was not sensitive to needs unique to the rural context, first, in the area of recruiting personnel and second, in the allocation of funding. Third, these rural districts did not have the benefit of positive examples of educating students with intensive learning needs which are often found in urban university and social agency programs. Thus, the rural community, school, classroom, and parent expectations for student learning and the role the school should play in educating students with severe disabilities was inconsistent. Fourth, by emulating service delivery models of urban areas, rural administrators neglected what constituted the reality of need for their students with severe disabilities, and overlooked local rural assets and resources to meet those needs. Finally, the weak political power of poor families could not affect the process of policy implementation in the rural context. Consequently, improving services for these students in this setting is a complex issue, which cannot be wholly addressed from monocular perspectives of curriculum, management, or policy.

Future research questions include those pertaining to school day comparisons of students with other kinds of low incidence disabilities in other rural settings and exploring policy in practice for similar-aged students in the general education program of those settings. Rural and inner-city school districts may have contextual commonalities, which could provide a basis for comparison. For example, often, both communities share racial similarities, as well as low socioeconomic status (Rosenholtz 1985). Contextual issues that promote and hinder educational effectiveness for students with disabilities in inner-city urban areas may be related to those in rural settings. Research with these populations of rural students and the situations surrounding their day-to-day activities may be recast in terms of students who live in "culturally different" settings. The centering point of future research should be comparison studies which explore the product, context, and process of policy implementation for students with severe disabilities in other culturally diverse settings including inner-city, ethnic minority areas, and settings in developing countries.

Educational research which extends the research focus from the policy implementor to the target of policy, and considers the cultural context of the policy, would greatly aid the understanding of the daily educational realities for persons with disabilities in disadvantaged settings. This understanding could lead to the development of educational policy and practice which is appropriate for all students, regardless of their socioeconomic class, disability, ethnicity, or geographic living location.

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Table 1

Selected Site and Student Characteristics

Characteristics	National Figure	Site 1 (Elizabeth)	Site 2 (Tiffany)	Site 3 (Roseann)
Population sparsity (persons per square mile)	--	53.9	67.7	103.7
Families below the poverty line (%)	12.5	30.9	27.0	19.4
Unemployment rate (%)	5.4	10.4	8.4	10.8
Students qualified for hot lunch program (%)	--	97.0	48.3	76.7
Age (yrs)		11	7	6
Verbal?		No	No	No
Ambulatory?		Yes	Yes	Yes
Toilet Trained?		No	No	Yes

Note. Table source is not cited to protect the anonymity of participants.

Serving handicapped infants and toddlers in rural areas: Impact of PL 99-457

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This is the second in a series of three articles that discuss PL 99-457 and its implications. The focus of this article is Title I: Handicapped Infants and Toddlers. The article discusses definitions, the individualized family service plan, and a plan of action for rural educators and administrators.

PL 99-457, signed into effect in October, 1986 by President Reagan, provides services for birth through five-year-old children with disabilities. This new law contains two titles. Title I—Handicapped Infants and Toddlers (the focus of this article), and Title II—Handicapped Children Ages three to five Inclusive (discussed in an article appearing in the next issue of this journal).

"The Impact of PL 99-457 on Rural Schools" (see *Journal of Rural and Small Schools,* Volume 1, number 3, pp. 8-10)—a brief overview of this important new law—presented special considerations for rural administrators and educators. This article focuses on the proviso for delivery of service for the birth through two-year-old population. Full implementation of this law will yield benefits for rural area schools. However, rural administrators must become involved in order to be fully informed and to act as advocates for their districts as legislation and regulations are written at the state level.

Title I of PL 99-457 authorizes discretionary monies to fund states for the development of a comprehensive state plan for a coordinated, interdisciplinary program of early intervention services for infants, toddlers, and their families. The governor of each state is charged with the responsibility of identifying a *Lead Agency* that will coordinate services. This agency will usually be one that is in existence and currently serving this population. The designated agency will have the responsibility for administration of funds provided under Title I of this act.

The governor will also appoint an *Interagency Coordinating Council* to oversee implementation of the state plan. This council will consist of 15 members which will include:

- at least three parents of handicapped infants, toddlers or handicapped children ages three through six inclusive
- at least three public or private providers of early intervention services
- at least one representative from the state legislature
- at least one person involved in personnel preparation, and
- other members representing each of the appropriate agencies involved in provision of, or payment for, early intervention services to handicapped infants, toddlers, and

their families. Additional members may be selected by the governor.

The basic intent of this law is to enhance the capacity of states to provide quality, early intervention services. Each state is also required to establish an infrastructure that coordinates resources already available while expanding and improving upon existing services. The statewide comprehensive programs is to be a multidisciplinary effort with interagency cooperation. Services are to be provided to *all* handicapped infants and toddlers and grant funds will facilitate coordination of payment from various public agencies and private sources. This will result in new monies for use in *supplementing* not *supplanting*, funds supporting existing agencies and service providers.

The basic intent of this law is to enhance the capacity of states to provide quality, early intervention services.

The state plan

The law requires each state to submit a plan providing very specific information on the establishment of a statewide system of services. The Interagency Coordinating Council and Lead Agency will provide services to children and their families at the birth through two-year-old level.

The plan must assure that funds will be used to assist the state to plan, develop, and implement a statewide system for delivery of services. The first three years of funding may be used to continue the efforts previously funded through the *State Planning Incentive Grants* that will be supplanted by this new program. By the third year, however, the states must have adopted a plan which incorporates all the elements of the required statewide system delineated by the law. These components must include information on:

- a definition for developmental delay to be used by the state, and a timetable ensuring that appropriate services will be delivered
- the procedures for multidisciplinary evaluation of child and family need
- the development of an individualized family service plan (IFP)
- a comprehensive child find and referral system
- a public awareness program
- a central directory of services, resources, and experts available in the state
- a comprehensive system of personnel development
- an established single line of authority in a lead agency
- a policy pertaining to contracting services from established service providers
- a procedure for timely reimbursements of funds under this law
- the policies and procedures used to ensure that personnel providing services are appropriately and adequately prepared and trained according to standards of the state
- a system for data collection regarding the early intervention programs.

Definitions

The most critical aspect of this new law lies in each state's role in formulating a definition for *developmental delay*. The law is very specific in providing the definitions for both handicapped infants and toddlers and for early intervention services.

Development delay

Each state will develop its procedure for identification of developmental delay. This definition will have a dramatic and direct impact on the services provided to this age group for many years to come. If the term is defined too narrowly, many children who would benefit from services may be denied entry into the programs. Conversely, a definition which is very broad will require service provision to too many children and, in effect, dilute necessary services to the most deserving children.

The wording and formula for developmental delay is a critical issue for all those in rural school districts. Rural administrators must become involved in the work and seek representation on the committees that develop this definition. The variety of services to be provided to the developmentally delayed are very encompassing, quite expensive, and

The key role of the family in the intervention process is stressed throughout the law.

must be available to every identified handicapped infant and toddler.

Handicapped infants and toddlers

Section 672 of PL 99-457 provides a concise definition for this term. The term 'handicapped infants and toddlers' refers to individuals from birth through two years of age, inclusive, who need early intervention services because they are experiencing developmental delays in one or more of the following areas including cognitive, physical, language and speech, psychosocial, and self-help skills domains of development. Infants may also have a diagnosed physical or mental condition which has a *high probability of resulting in developmental delay.* At the state's discretion, individuals may be included who are at risk of having substantial developmental delays if early intervention services are not provided (PL 99-457,1986).

Early intervention services

These services are defined by the law to include, but not be limited to, the following seven criteria and must:

- be provided under public supervision
- be provided at no cost to the family
- meet the developmental needs of the child
- meet the standards of the state
- include, but not be limited to: family training, counseling, home visits, speech instruction, speech pathology and audiology, occupational therapy, physical therapy, psychological services, case management services, medical services for diagnostic or evaluation screening and assessment services, health services necessary to enable the child to benefit from other intervention
- be delivered by qualified personnel
- be delivered in conformity with the *individual family service plan* (IFP).

The individual family service plan (IFP)

The key role of the family in the intervention process is stressed throughout the law. Every child is to be served through the above vehicle and must receive a multidisciplinary assessment to determine unique needs and appropriate services which address these needs. The multidisciplinary team has the responsibility to develop the IFP which must include participation of the parents and/or guardians of the child. Goals for the parents and their education must be written as part of the overall plan for intervention.

The plan must include the following components:

- a statement of infant or toddler present state of development based upon objective criteria
- a statement explaining individual family unique strengths and needs in relation to enhancing full development of the child in question
- a statement of major outcomes to be achieved for the infant or toddler and family along with the criteria, procedures, and a timeline to determine progress
- a statement of early intervention services needed by the infant or toddler and the family, including frequency, intensity and method delivery
- projected date for beginning services and anticipated duration
- names of the person in charge of case management from the profession most immediately relevant to the needs of the infants or toddlers and family who will be responsible for implementation of the plan
- plans listed to support transition of child to service provider under Part B of the Act.

The IFP must be developed within a reasonable time after the assessment. However, if the parents agree, services may commence prior to the completion of the assessment (PL 99-457). This part of the law permits provision of necessary services at a critical period of development for infants and toddlers. The law also cautions that this measure is not to be abused to delay necessary assessment or development of the IFP within a "reasonable period of time." The law specifies that the plan does not constitute a guarantee of results; agencies and persons cannot be held accountable if an infant or toddler does not achieve the growth projected. However, agencies and professionals are not relieved of the responsibility of making efforts to assist the child and family in achieving stated outcomes (PL 99-457).

Benefits to rural districts

There are many long-range benefits for rural area schools and districts that will result from implementation of this new law. Overall cost effectiveness of providing early intervention services to handicapped infants and toddlers will save the districts money over the long term (Karnes, Schwedel, Lewis, Ratts & Esry, 1981). Research has provided evidence of the decreasing cost of serving handicapped youngsters who receive early intervention services (Antley & DuBose, 1981).

The law encourages interagency cooperation and collaboration in the provision of services to this population. School districts need not develop and implement their own service delivery programs, or the physical plant to house these classes. The likelihood that states will identify the State Education Agency (SEA) and the Local Educational Agency (LEA) as the Lead Agency in coordination of services to birth through two years of age is slim. Most states will identify other major agencies for assumption of coordination of services to this age group. In this case, rural districts can then refer parents to the appropriate agency. In the states in which the SEA is identified as the Lead Agency, districts can work out cooperative agreements with existing programs serving this population.

In some cases, districts may need to agree to provide a certified teacher for the program but since the regulations are not yet available at the writing of this article, it is a question that cannot be answered. There are also very few college and university programs providing training in early childhood special education throughout the nation. Fewer still provide special training for infant interventionists.

Regionalization and cost sharing for intervention are also encouraged throughout this legislation. The flexibility of allowing SEAs to fund Intermediate Education Units (IEUs) to do the job of early intervention allows for the establishment of regional resource and ser-vice centers. These centers are very costly to develop, but once in place many children can be served through a most cost-effective model.

The benefits of deciding to serve seem to enhance the likelihood that many states will apply for the money to develop a statewide system for delivery of services to infants, toddlers, and their families. Serving this population at an earlier age will contribute to their functioning at a much higher level in later years. Increased adaptation on the part of the family unit should hopefully decrease the demand for services and therefore reduce the cost to the system throughout the lifespan of this population.

Plan of action

Rural educators must become involved immediately and seek representation on all appropriate advisory committees. Representation on the Interagency Coordinating Council is critical. This body will be appointed by the governor of each state for the birth through two-year-old initiative. Two of the major issues the Council must address immediately include the development of the overall state plan and the formulation of the definition of "developmentally delayed." Both are critical to successful implementation of this law. Rural educators must work together and develop a cohesive plan of action that will assure their representation on these committees. The rural perspective must be included. Rural districts have very unique needs that must be recognized in the overall plan. Priorities of urban professionals are very different from those of their rural counterparts. Both groups will have different ideas about the definition for the term "developmentally delayed." If rural representatives abrogate responsibility to their urban colleagues the resulting definition will undoubtedly focus on urban communities and their needs and priorities. Rural educators will then have no alternative but to live with, and implement that definition over a long period of time.

Rural educators must become involved immediately and seek representation on all appropriate advisory committees.

Considering the growing effects of poverty and rural isolation on growth and development patterns in young children, rural educators must have input into the definition of developmental delay.

In many states, a large portion of the rural population is extremely poor. This is especially true in the rapidly growing Southern Sunbelt states. Although there are many poor people living in any urban environment, rural poverty takes on many unique characteristics. Isolation from services, including good medical care and child care facilities is common. According to the study *Shadows In the Sunbelt* (1986), per capita income in rural areas in 1980 was less than three-fourths of the national average. The income of blacks, at that same time, was only 30 percent of the national average. The Southern Growth Policies Board 1986 publication, entitled *Halfway Home and a Long Way to Go* further substantiated the data by stating the following: "Although their economic programs have listed Southern per capita income to be 88 percent of the national average, millions of us—approximately the same number as in 1965, still struggle in poverty" (p. 7). While this refers specifically to the South, most rural areas of the United States also find themselves in an economic decline. Contributing factors include the plight of the farmer, declining need for oil and coal in the West, and a decreasing tax base from which the public schools and social agencies draw their operating budget. As a result, many rural areas have fewer services available to both the poor and middle class than they have had for many years.

Very few rural areas have escaped this economic downturn. Unfortunately, young children are often the first to suffer. Low income mothers in rural America are especially at risk during pregnancy, as will be the children they bear. Pregnancy rates of teenagers are soaring in both urban and rural areas. A rural pregnant teenager is more likely "at risk" than her urban counterpart, if for no other reasons than those of geographical isolation and lack of proper medical care. Mothers have not received necessary prenatal care and have been provided only minimal medical care at the time of delivery. They often do not seek proper postnatal care because of costs involved in travel to medical facilities and the because of the lack of medical doctors in impoverished and economically depressed rural areas. These factors contribute to developmental delay in many children and more are being affected than ever before.

The risk of delayed physical development in infants due to lack of medical care and good nutrition is always present. Not only may children's physical growth be stunted, but cognitive development may also be affected. Problem-solving skills will be negatively affected and limited experience may affect the concepts acquired. These characteristics of developmental delay are often seen by rural administrators and teachers as children enter kindergarten or first grade and are seen for the first time. Many have not had preschool programs available to them due to isolation and lack of facilities. Considering the growing effects of poverty and rural isolation on growth and development patterns in young children, rural educators must have input into the definition of developmental delay.

Summary

Rural school administrators and other leaders from rural areas must work together in order to make their needs and priorities known. Rural leaders must join together and present a statewide united front for the specific needs of handicapped infants and toddlers who are developmentally delayed. The rural population may not be as large as the urban sectors of the state, but this group represents a larger geographical area. A cohesive group of rural representatives will have more "clout" than isolated rural representatives trying to represent their own specific regions of the state. If the leaders are willing to organize themselves to present their views together, the committees involved will then need to address both rural and urban viewpoints. Rural educators must not be required to implement programs basically designed for nonrural populations. Instead, they must assume a leadership role so that the needs of the rural developmentally delayed, their parents, and society in general will benefit for many years to come.

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Rural leaders must join together and present a statewide united front for the specific needs of handicapped infants and toddlers who are developmentally delayed.

One-Room schools and the university museum

Do colleges and universities with a rural education interest enrich the lives of their future teachers with the early artifacts of their profession? In the fall of 1986 the Committee on Rural Education at the University of Northern Iowa (UNI) became interested in this question.

A questionnaire, conducted by UNI, revealed the following: institutions with early school artifacts were found in 11 states. The reports were not all complete, but the Common School, housing elementary grades, was most usual, as was the 1860-1890 period for artifacts. The Smithsonian in Washington D.C., and the Newark Museum in New Jersey were the only two whose school items date before 1830.

Most one-room school museums are located in other than colleges or universities, said the 10 states responding to this question. Iowa has 57 located in 55 of the 99 counties, and Nebraska has 17, mainly in state parks. Nebraska has 3 and Utah has 2 high school buildings as museums, and Nebraska, Nevada, and North Dakota have one or more K-12 grade school building museums.

The present University of Northern Iowa established a museum in its 14th year as the Iowa State Normal School. Currently, it is like most state universities and colleges without a one-room school to display to students and visitors. Fort Hayes State University in western Kansas has a stone one-room school museum on its campus, a gift of the local Phi Delta Kappa chapter. In 1972 the Student Education Association at Chadron State College in Nebraska moved a one-room school building to the campus. While the one-room school was originally painted white, in the renovation process it was given a red coat to match the literary concept of what an old-time rural school should look like.

Presently very few university museums exist which are located on teacher education university or college campuses with a one-room school as part of the collection. However, state parks and county conservation groups in states like Iowa and Nebraska display many of these small buildings as museums.

Additional school museums are presented in *America's Country Schools* (1984) by Andrew Gulliford (published by Preservation Press, Washington, DC). In the final section, "Country School Preservations," museum schools are identified, some with pictures, and their restorations described.

For further information, or to obtain a copy of the full report, contact William H. Dreier, Chair; UNI Committee on Rural Education; Department of Educational Psychology and Foundations; University of Northern Iowa; Cedar Falls, IA 50614-0607; 319/273-2694.

Serving three- through five-year-old children in early childhood special education programs in rural areas: The impact of P.L. 99-457

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This article, the last in a series of three, provides information on the grants available under the auspices of PL 99-457 for provision of service to three- to five-year-olds. These are funded through Title II: Handicapped Children aged three to five inclusive. The entitlement of this law provides incentives for states to serve such children. The disincentive involves loss of all federal funding at the birth through five-year-old level if these children are not served by 1990.

Rural school administrators, as well as other leaders in rural communities, must become integrally involved in the planning process. This must be done in order to assure that the state plan developed reflects the best interests of all children and their families, including those residing in rural communities.

Title II of PL 99-457 provides states the opportunity to apply for funds to serve three- to five-year-old children. Awards are based upon a proposal submitted by each state. This new preschool grant program provides escalating funding on a per capita basis throughout the next three fiscal years of 1987-90. States will be required to serve all or none of their three- to five-year-old population by 1990 or risk losing all federal funding for programs serving this age group.

According to data available through the U. S. Department of Education, states are currently serving more than 75% of the children aged three to five (HR. 99-860). With the incentives provided by this new law, it is possible that all eligible children will be served. Provision of these services will depend on the level of funds that Congress appropriates under the preschool program.

All states applying for PL 94-142 funds in the 1990-91 school year, or thereafter, must assure they are providing a free appropriate public education to all disabled youngsters at the three- to five-year-old age level. Those states failing to serve will lose the following funding:

- PL 99-457 Preschool Grant
- PL 94-142 formula funds for the three- to five-year-old population served
- grants and contracts related to preschool special education authorized under the EHA discretionary programs Parts C through G including:
- Part C: Centers and services to meet special needs,
- Part D: Training personnel
- Part E: Research in the education of the handicapped
- Part F: Instructional media for the handicapped
- Part G: Technology, education media and materials (Weiner & Koppleman, 1987).

States not serving this age group will lose funds designated for the birth through five-year-old level in the above programs.

The committee report on this new law emphasizes that family services are an integral component in preschool programming. It is recommended that the Individual Education

Plan (IEP) include instruction for parents.

The program for three- to five-year-olds will be administered through the State Education Agencies (SEAs) and Local Education Agencies (LEAs). The SEAs and LEAs may contract with service delivery programs that are currently in existence. The spirit of the law is to supplement existing programs, not to replace or supplant available programs.

Funding levels under Title II

The formula for funding Title II provides escalating amounts over the next four fiscal years. The federal authorization levels for FY 1987-88 are (track A) $300 for each three- through five-year-old handicapped child served in the previous school year; and (track B) a maximum of $3800 for each three- through five-year-old who the state intends to serve in the coming year beyond the previous year's count. These are authorization levels only, and Congress must still appropriate the actual amounts each year, beginning with fiscal year 1987. The basic amount authorized under track A escalates in the following manner:

FY 87 (school year 87-88)	$300 per child
FY 88 (school year 88-89)	$400 per child
FY 89 (school year 89-90)	$500 per child
FY 90 (school year 90-91)	$1000 per child*
Thereafter	$1000 per child

* track B for unserved ends

Each year, children counted as unserved under track B are only those beyond the previous year's count. Children counted in the first year under track B would generate funds under track A in the second year. By the year 1990, states will receive $1000 per child with no distinction between children served in previous and current school years.

Full service mandate

The full service mandate will be delayed for one year until school year 1990-91 if:

- federal appropriations for this program for FY '87, '88, and '89 do not total $656 million (projected full funding),
- and the federal appropriation for FY 90 is less than $306 million ($900 per child) (Weiner & Koppelman, 1987)

In-state flow-through of PL 99-457 dollars

During FY 1987-88, 30% of the flow-through federal funds may remain in the SEA. Five percent may be used for administration and 25% for discretionary spending. At least 70% of the dollars must flow through to the LEAs and Intermediate Education Units (IEUs). In FY 88 and beyond, 5% may stay in the SEA for administration and 20% for discretionary spending but 75% must flow through to the LEAs and IEUs.

The activities of the old State Plan Grants may be maintained and/or extended through the use of funds retained by the SEA. This will allow for continuity of the work in committees of planners already in function.

Title II of the new law will generate significant revenues that have not previously been available to school districts as an incentive to serve the three- to five-year-old population.

The provision of Title II: Discretionary programs

Section 301 of the law provides monies for the Secretary of Education to make grants for Regional Resource and Federal Centers. These centers are to be consistent with the priority needs established by the states that are directly served by the center. Each regional resource center shall:

- assist in problem-solving in provision of quality services to handicapped infants and toddlers and their families
- assist in developing and replicating successful program and practice models
- disseminate information to all SEAs within the region and coordinate activities with other regional centers
- assist in information dissemination to and training activities for professionals and parents
- provide information to training agencies regarding grant preparation and submission (Weiner & Koppleman, 1987).

The Secretary may establish one central coordinating technical assistance center for states that will focus on national priorities and assist regional centers in provision of technical assistance.

One of the major advantages to rural school districts, especially those that have quite small school populations, is the opportunity to contract services from existing agencies and/or programs.

Section 302 adds provision of monies for the development of extended school year demonstration programs for severely handicapped children including deaf-blind children and youth. Both public and nonprofit private agencies and institutions may apply.

Section 303 amends the Act to provide funding for the development and operation of experimental, demonstration, and outreach preschool and early intervention programs for handicapped children. These programs are to facilitate the growth of children in all developmental domains and encourage the participation of parents in the operation of the program. Community awareness is to be provided. Training regarding exemplary models and practices is to be provided to state and local personnel serving handicapped children from birth through eight years of age. This provision replaces the funding previously awarded under the Handicapped Children's Early Education Programs (HCEEP).

The sections of this Title also cover provisions for a variety of programs, including: services to severely handicapped children, postsecondary education programs, secondary education and transitional services for handicapped youth. Grants for personnel training, traineeships awarded by SEAs and institutions, clearinghouses, research and demonstration projects. Captioned films and educational media for handicapped persons are also funded through this provision. The Act is amended also by the addition of Part G: technology, educational media and materials for the handicapped are also included in the Title.

Title IV: Miscellaneous

This Title authorizes monies for various programs including funding for American Indians and removal of architectural barriers. It also provides definitions for many terms in the amendments including those for allocation, Indians, qualified personnel, and evaluation procedures.

Implications for rural school districts

Title II of the new law will generate significant revenues that have not previously been available to school districts as an incentive to serve the three- to five-year-old population. This should encourage school districts to fund and serve children presently not receiving services.

Many rural school districts may not have been recipients of funds for provision of these services. As a result, throughout rural America there may be a rather large group of children in need of such programming. At first glance, Title II provisions may appear to be an incentive to serve. However, rural administrators will quickly realize the implications of developing programs for a group of children who have not been served before. The need for additional teachers, materials, physical facilities, as well as the necessity of retraining presently employed personnel are just a few of the problems facing the administrator.

The result of withholding services for this group of youngsters will be loss of revenue in other federal programs with funding at the below five-year-old level. Most rural school districts will more than likely decide to serve rather than risk this loss of funds. Problems involved in the development and provision of services will, therefore, ultimately be overcome.

Advantages within the new law

One of the major advantages to rural school districts, especially those that have quite small school populations, is the opportunity to contract services from existing agencies and/or programs. Each school district need not develop all the physical plants, materials, and resources needed to set up classrooms for these children. It is possible for districts to combine resources with other agencies while developing programs for this relatively new population of students.

In addition, many administrators have expressed concern about the viability of serving three- to five-year-old children on elementary school campuses. Contracting services from other early childhood programs may provide an effective alternative. Many rural LEAs may have physical plant shortages for housing of programs and, like their urban counterparts, suffer very restricted budgets. It may be extremely difficult to finance the building of new facilities.

One necessary assurance required by the law involves the availability of appropriately trained personnel. Rural school districts may work cooperatively with contracting agencies in providing funds to assist in the training of needed personnel. Existing staff may not have skills necessary for effective intervention with this age group. Such a contractual arrangement will benefit both the LEAs and the agencies. For the rural administrator this can be an excellent solution for training personnel and for the location for programs of three- to five-year-olds.

Regionalization of services is also encouraged under this law. This may allow for additional funding of existing IEUs or the development of new regional service centers. This model is appropriate for serving a small population of clients dispersed over a wide geographical region. Interagency coordination and contracting of services from existing programs will also encourage regionalization of services. Rural, as well as urban school districts, should search out existing service providers in order to prevent duplication of services.

The flexibility in models for delivery of service that is allowed within this law provides many options for school districts and agencies. Both home-based and center-based programs are viable options, as are variations in the length of a school day. This type of flexibility should encourage interagency cooperation, and allow for variation in the delivery of service approaches selected by any one locale.

Each state must provide its own definition of developmental delay. This will allow diversity in the population of children served as "developmentally delayed" in various regions of the country. This definition, however, will obviously have a direct impact upon the type of children served at the three- to five-year-old level in the schools. As mentioned in previous articles, while this is an advantage, it is only so if rural school administrators and other appropriate leaders take the responsibility for getting their thoughts on this definition into the state plan.

Where do we go from here?

School administrators, as well as other interested persons residing in rural America, must become informed of their states' planning activities in terms of this new law. They must also realize that it is their responsibility, not that of any one state agency, to become informed and involved participants in the development process.

This law is not MANDATED! Many educators fail to understand this very important point. There are, however, many disadvantages and financial losses that can be incurred as a result of not implementing Title II services at the three- to five-year-old level. By 1990 all states must make a decision to serve either all or none of the three- through five-year-old age group. A decision not to serve will result in loss of all PL 99-457 monies along with that portion of the funding of Parts C through G (mentioned previously) allocated for the below five-year-old level.

Summary

There are powerful incentives for implementation. One major disadvantage facing all states, and ultimately the school districts, is the below-level federal funding anticipated. The level of funding actually needed to provide proper services will not be coming from the federal government. Ultimately, for full implementation of this law, each state legislature will need to appropriate supplementary funds. There is grave concern on the part of many SEA officials on the actual amount of money that will be required to provide services according to the provision of the law. New programs such as this may not be looked upon favorably by state legislators as shortages of overall dollars impact integrity of existing programs.

The ultimate impact of these amendments will be seen in future years. Projections include serving all youngsters with disabilities at the 3- to 5-year-old level and a reduction in needed services by this group in later years. The cost effectiveness of the law will be realized as these children continue through the public school system. The overall impact of provision of services at this

New programs such as this may not be looked upon favorably by state legislators as shortages of overall dollars impact integrity of existing programs.

early age should yield benefits in a reduction of number of children requiring special education services in later years in school and a reduced need for additional support services for those children served. The benefits to the family and child in increased opportunity for assistance in the ability to cope with and adapt to a disability render these new amendments a landmark piece of legislation with far-reaching impact on our education system. The impact of the benefits of this legislation must be attained by rural America. As we move forward to serve, networking for sharing strategies in the actual implementation of the law will be essential for national success.

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1987 National rural and small schools conference looks at collaboration

Representatives from 25 national professional organizations convened at Arlington, Virginia this past October for the Second Annual National Rural and Small Schools Conference. The conference was sponsored by the National Rural and Small Schools Consortium (NRSSC) of Bellingham, Washington.

Members of cosponsoring organizations joined nearly 300 representatives of school districts, state and federal education agencies, and university personnel to discuss issues of cooperation under the conference theme, "Creative Collaboration: Setting the Pace in Rural and Small School Education."

Highlights of this year's conference included talks by Congressmen Fred Grandy of Iowa and Steve Gunderson of Wisconsin. Dr. Jonathan Sher, President of the North Carolina-based Rural Education and Development, Inc., addressed concerns of why rural and small school districts do not receive adequate funding from federal sources. An additional conference highlight was the Congressional Reception in which over 200 Senators and Representatives met with conference participants at the Cannon Building Caucus Room on Capitol Hill.

Addressing conference attendees at the opening session were Alan Tracy, Special Advisor to President Reagan on Agricultural Trade, and U.S. Department of Education Assistant Secretary John Pucciano, who spoke on his department's Rural Education Initiative.

Nine rural and small school districts from around the country were presented national awards for exemplary rural and small school programs. According to Dr. Doris Helge, Director of the NRSSC, the awards were designed to "recognize excellence in education in geographically isolated areas." Award winners were chosen by a national panel of program reviewers.

Over 100 concurrent sessions addressed major rural and small schools such as at-risk populations, legislative issues and policies, special education, and vocational education. A manual of conference proceedings is currently being published and will be available to the general public later this month.

To obtain more information on the conference, to order conference proceedings or to receive the 1989 Call for Papers, contact the National Rural and Small School Consortium; National Rural Development Institute; Miller Hall 359; Western Washington University; Bellingham, WA 98225; 206/676-3576.

APPROPRIATE TECHNOLOGY

ERIC

Technologies as Rural Special Education Problem-Solvers

DORIS HELGE

Abstract *Advanced technologies are emerging in rural school systems. This article discusses the availability of a variety of new technologies and their primary uses for instructional support, instructional applications, management, and staff development. Problems in initiating new technologies in rural environments and suggestions for using them are discussed. Successful technological models and projected future uses are described.*

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■ Technologies from microcomputers to satellites are increasingly being used by schools across America. Their values range from global information dissemination systems to tools that facilitate "seeing" by blind students and "hearing" by deaf students.

Modern technology offers particular benefits for rural schools. Many of the most frequently identified rural service delivery problems (e.g., professional isolation and long distances between services and those needing them) can be partially ameliorated by increased use of advanced technologies.

Rural schools have had less access to most forms of educational technology than nonrural schools (McCormick, 1983). The smallest and most isolated rural schools can potentially gain the most from the current technological flurry.

AVAILABILITY AND USE OF EMERGING TECHNOLOGIES

A 1983 National Rural Project study (Helge, 1983) of 200 rural districts/cooperatives representative of the United States showed that a preponderance of rural school systems have at least one type of electronic technology available to them. Although most rural schools have had some type of technology (e.g., audio tapes, radio, instructional television, two-way TV, and teletype) for years, this study was primarily concerned with the emerging electronic technologies. Microcomputers were most common, as indicated in Table 1.

States with the lowest levels of accessibility were in the deep South. In addition, a disproportionate number of Bureau of Indian Affairs school system respondents stated their schools had no technology available.

Even though 88% of those interviewed had at least one microcomputer in their district, a surprisingly low percentage, only 18%, were

TABLE 1
Types of Technology Available to Rural Districts/Cooperatives Surveyed

Type of Technology	*Percent*
Microcomputers	88
Videodiscs	19
Telecommunications	18
Satellite communications	2
Other (voice synthesizer, specialized phone equipment, etc.)	21
None	12

linking these computers with telecommunications systems. Interactive applications of videodiscs and microcomputers were just beginning to be investigated.

Microcomputers were more popular in rural schools than were mainframes. Cost factors were reported to be responsible for this. Respondents said their rural districts/cooperatives could afford microcomputers but couldn't afford mainframe or minicomputers. They also reported that microcomputers were more accessible to remote locations. Most of the respondents also said that microcomputers were more compatible with their isolation from university and state education agency mainframes (although some teamed their microcomputer with a mainframe or a minicomputer via a modem).

Satellites were primarily used in remote areas surrounded by vast land areas with sparse populations. One exception was a system reaching to Appalachia's small clustered towns.

The primary uses of technology identified were as follows: instructional support and applications, 72%; managerial applications, 42%; inservice, 8%. Instructional uses ranged from computer-assisted instruction via microcomputer to satellite-based instruction. Managerial uses by administrators varied from information retrieval to decision making and report generation. Inservice uses ranged from didactic to interactive.

PROBLEM-SOLVING USES OF TECHNOLOGY

There are four primary uses of technology to solve rural special education problems: instructional support, instructional applications, management tools, and staff development applications.

Instructional Support

Computer-managed instruction (CMI) offers a method of administering/evaluating tests, keeping records, and making decisions. CMI software is also designed to support the instructional system and provide diagnostic feedback regarding student performance.

Educational technology can improve the quality of education in rural school districts by giving students access to much more extensive curricular offerings. Amplified telephone systems allow students to hear lectures or hold discussion sessions with remotely located persons. Instructional television, including transmission via cable or special satellite, presents subjects that might otherwise be omitted from the small school curriculum.

Availability of learning technologies makes teacher specialization unnecessary and permits instructors to spend more of their time teaching basic skills or supervising individualized study. Technology can also assist in overcoming isolation from urban cultural institutions; music, plays, and other art forms can be transmitted electronically. Library materials and searches are also accessible through global information and dissemination systems such as the Source or CompuServe.

A great deal of software is appearing for testing procedures, including individual "on-line" testing and rapid scoring/interpretation. Statements of IEP goals and objectives can be directly linked to assessment instruments accessed through currently available software data bases. Consistent curricula can then be developed.

With microcomputers, small schools can now afford to access mainframe programs for monitoring schedules and follow-through aspects of student IEPs. Programs can also facilitate the creation of reports from the centralized data base.

Resource and information systems such as SpecialNet and its Rural Bulletin Board, statewide telecommunications systems, and global electronic communication systems are also available. These provide data bases of media, materials, and other human and program resources. Such linkage systems increase knowledge regarding service options for rural handicapped children; they also allow personal conversations among rural special educators regarding daily problems and successful strategies.

Many teachers are finding that they can computerize routine drill, reinforcement, and record keeping, leaving more time for actual teaching. This is of tremendous benefit in understaffed rural school systems, particularly those in which a "generic" special educator serves students with multiple types of disabilities.

Word processing software capabilities are also a time saver for many generic rural special educators and others in systems with inadequate resources who must prepare their own curricula.

Modern technologies are facilitating communication and collaboration among many schools and human service agencies. Agencies are also now electronically exchanging nonconfidential diagnostic and progress reports. This ability to collaborate on service delivery on an as-needed basis is preferable to rural school consolidation.

Unique support systems are also being generated among remote rural families having children with similar disabilities. These families are developing the capacity to compare service delivery effectiveness, home teaching, and availability of resources. As many ranches, farms, and other rural businesses now have microcomputers connected with global telecommunications systems, this approach does not always require the assistance of school personnel.

Similarly, communication between service providers and families is being strengthened via technology. This is sometimes as simple as locating a CB radio at the hub of a "holler" surrounded by geographical barriers. Typically, it means exchanging videotapes among remotely located families and specialists.

Instructional Applications

Computer-assisted instruction (CAI) has the advantage of being interactive. The computer assumes a direct instructional role. CAI includes drill and practice, tutorial, simulation modeling, problem analysis, and instructional game possibilities.

Equipment such as the Kurzweil Reading Machine or the Optacon print reading aid are of particular importance to rural schools lacking sufficient numbers of specialists to teach those with low-incidence handicaps.

One- or two-way instructional television also offers more diverse instructional alternatives, as do satellite-based delivery systems such as the Appalachia Community Service Network.

Mobile vans with specialized electronic equipment are becoming more frequent as a way to reach students in remote locations whose school systems lack either full-time teaching specialists or extraordinary equipment. The vans may have a diagnostic and prescriptive focus or carry mobile electronic curricula.

Many disabled students are personally accessing statewide or national telecommunications systems to obtain service or instructional information. Many specialized pupil services, including vocational guidance and academic diagnostic and prescriptive activities, are now computerized.

Actual student experience with technologies can develop realistic career alternatives for students with disabilities, such as computer programming positions that require little physical agility for individuals with physical disabilities.

Management Tools

For years, numerous urban school systems have used expensive mainframe computers to generate reports for local or state requirements. However, it was not until the advent of the silicon chip that this became a possibility for most rural districts. In fact, Alaska now has a system of developing interface capabilities for exchanging data and updating student files at each site of a district/cooperative or across the state. The northernmost school system of this rural state links each educator/district by a network that enables direct computer-to-computer transfer of student-related, budgetary, and other types of information. One frequently cited advantage of such systems is more accurate record-keeping, particularly for single administrators handling large geographic areas.

Advanced instructional technologies including two-way television, instructional satellites, and microcomputers have facilitated staff differentiation. Cooperatives/districts have been able to retain specialists (such as an itinerant low-incidence teacher or a teacher of rural gifted children) by sharing that person with other districts via instructional technology. Personnel retention results from cost savings (i.e., reduced layoffs) and from personal relief to the specialist (e.g., less time spent traveling).

In fact, some administrators reported that increased use of instructional technologies promote staff retention (Helge, 1983). Isolated special educators who can frequently communicate with those in similar circumstances feel much less professionally isolated. With the added personal benefits of electronically secured cultural resources, many rural personnel who might otherwise flee isolated areas do not.

A "capital-intensive man-machine model" was designed by Willett and Swanson (1979) to reduce the labor intensity of rural education. The model reduced the numbers of professional personnel and increased the numbers of student workers used. Technological media and programmed instruction were heavily relied upon.

Staff Development Applications

Satellite inservice sessions allow participants to benefit from the knowledge and expertise of consultants or professors in distant locations. Such sessions benefit rural educators when they include demonstrations of techniques for working with low-incidence handicapping conditions.

While didactic staff development sessions can be helpful and are often all that is feasible, interactive sessions can frequently be arranged via two-way television or satellite transmission. As a valuable follow-up or staff development activity, videodiscs of an educator's strategies with children with disabilities can be mailed to a specialist/consultant for feedback.

Accessing information systems via telecommunications is a staff development technique that does not need to be limited to use for an immediate need. Grouping teachers or administrators to discuss optimum benefits from such a system is advisable. Formal computer-assisted instruction can, of course, be a learning technique used by the teacher as well as by students. This has been accomplished by mailing appropriate software to teachers and by a mobile inservice van equipped with computers.

IMPLEMENTATION PROBLEMS

The problems experienced by those implementing advanced technologies in rural environments may be grouped into four categories. These include the state of the art of advanced technology, fiscal inadequacies, staff development needs, and adverse parent or community attitudes.

State of the Art

A primary problem for special educators is that few technology designers, especially computer programmers, have had knowledge of special education. Many well-composed programs have been poorly suited to classroom use for integration with existing curricula.

Even fewer programmers have understood rural constraints and issues. Communications among developers and potential users have generally been poor. Confusion, and some differential pricing, have been caused by the myriad of vendors in the field. Sales organizations have confounded this problem by a lack of follow-up or servicing after installation.

Incompatible microcomputer or videodisc player equipment and the inability to copy videodisc software are frequently problems. Software incompatibility has prohibited sharing of data bases. Ownership (copyright) guidelines, particularly for satellite receptions, are not yet clear. FCC regulations have not necessarily been developed to fit the rural school situation.

Problems also exist with both direct-access computing systems and mainframe or "service bureau" systems. Direct access systems are those used directly by special education personnel via microcomputer or a terminal connected to a time-shared computer. These systems are usually less expensive than mainframe systems, but they require staff training. Disadvantages include downtime due to "crashes" during peak use, problems over priorities of usage, and associated expenses such as long distance charges.

Mainframe systems require teachers to complete forms, cards, and so forth. Data are sent to computer operators at another location; the central computer processes the forms, and printed reports or IEP's are returned. This system gives no immediate access to the data base, nor can one readily edit or change it. Turnaround time is also a negative factor, especially in remote areas.

Fiscal Inadequacies

The primary monetary problems have been associated with the acquisition of hardware and software. However, rural schools are now becoming aware of monetary needs for staff training, as well.

Front-end costs associated with capitalization of instructional technology hardware (and some software) are the greatest share of total costs, and are often underestimated. Rental of telecommunications lines and long distance charges also represent major costs and appear to be increasing.

Ongoing costs are difficult to predict, since much of the equipment is new and its actual "useful life" and track record have not yet been determined. Some equipment costs soar because new and better products are developed daily. Many innovations, such as adaptations of laboratory science equipment, may take years to be acquired by schools because of their initial expense.

Initial costs, originally perceived to be high by school boards, are later seen as minimal compared to benefits being received. However, initial costs for developmental time frequently are overrun, and there are difficulties in finding experts to assist with computer usage and programming (Helge, 1983). Rural schools have received few company donations of hardware, and rural school personnel are frequently less adept at asking for corporate donations or grants.

Staff Development Needs

Complaints about the use of new technologies have included the following: staff illiteracy and apprehension about computers; personnel needed for training others to use new technologies; staff resistance to procedural changes; human error factors; and unrealistic expectations of technologies. Rural schools have less adequate staff development programs to begin with, and staff training is particularly difficult in rural America, where personnel attrition rates of 40% are not uncommon.

Parent or Community Attitudes

Rural communities value tradition and direct personal contact. Technology is often perceived as an alien influence. Gaining parent and community acceptance is essential. This is especially true with strategies for improvement of parent-educator communication or parent involvement via technology. Rural systems which neglect parent/community attitudes find that their efficient parent training systems are not used, whether they be via remote electronic communication, TV signal transmissions, or simpler methods such as exchanging training and observation videotapes.

SUGGESTIONS FOR INITIATING USE OF NEW TECHNOLOGIES

Rural schools are a unique laboratory for developing and testing new ways of providing education to handicapped students. Some suggestions for initiating successful new efforts are outlined in the sections that follow.

Seek external financial aid. Corporate donations have been primarily available to urban school systems with relatively high visibility for the donor industry. It is time to make known to corporations, private foundations, and community organizations the inequities in the availability of technologies for rural schools. Approaching corporations that produce rural-focused commodities should be a first step. Even a small donation can serve as "seed money" for larger grants.

Computer corporations should understand that the rural school system values donations not only of hardware, but also of software or staff training time and resources. Potential tax deductions and visibility for the corporation should be stressed. Although most foundations are not rural-focused, they would value the fact that a rural school system had been able to obtain seed money from corporations or local community organizations. Local businesses or civic organizations may be interested in donating or sharing equipment or staff training expertise. This can gain them positive public recognition and potential tax write-offs.

Consider local rural culture and norms. The "high tech–high touch" approach described by Naisbitt (1983) involves personalizing the use of new technologies. It is particularly apropos for rural America and can be used to generate the support of the rural community. Some of the more successful rural technological innovations have been designed to use existing rural grapevines or to increase the "high touch" approach of rural neighbor helping neighbor.

Create community understanding and support. Use of new technologies must be "sold" not only to school personnel but also to the total community. Offering concrete, hands-on evidence of technology utilization will usually result in a high degree of student feedback and parent acceptance (e.g., a computer printout which a student can take home to share with parents). School personnel should make special efforts to educate their rural community on such positive implications as potential student employment in "information society" jobs and the concrete results in instructional effectiveness and student change resulting from implementation of advanced technologies.

Involve teachers in planning processes. Teacher-initiated uses of technologies are better accepted than when they are initiated by administrators. The adept rural administrator will involve teachers in planning and developmental processes. Continued local enthusiasm for implementation is often due to the efforts of an individual teacher advocate whose support should be cultivated. Administrative and school board advocates are also helpful.

Organizing an interested and enthusiastic staff group will help determine what cognitive and affective approaches are needed for acceptance and use. This group will want to seek advice from other rural practitioners using the same technology before adopting or adapting it for the school system. The assistance of related state and national agencies dedicated to the use of technology should also be sought. Technologies selected for implementation should be flexible, use existing equipment capabilities, be "user friendly," and permit sharing of data bases.

It is wise to begin on a small scale and ensure that success will be reported by the highly efficient rural grapevine. Likewise, flexibility in planning, implementation, and maintenance strategies is essential.

Fragmentary approaches to curriculum development in introducing technologies should be avoided. Implementation should be a school- or district-wide effort, and part of the regular learning situation rather than a "pull-out" activity.

Build staff skills. Staff must understand that technologies can be used effectively to supplement, not supplant, the efforts of rural teachers. An important part of any staff training session will include desensitizing rural staff to technologies. Because most rural teachers derive their job reinforcements from positive interactions with students, training must emphasize that technologies do not substitute for teacher-student interaction. Rural schools should also express their inservice and preservice training needs to university preparation programs.

Ensure student participation. Student participation will be enhanced if technologies are readily available in the classroom or associated with greater student scheduling flexibility. Extensive efforts should be made to teach students the immediate and career opportunities available through technologies.

SUCCESSFUL MODELS

Selected examples of successful uses of technology to solve rural problems are described in this section. These models were developed in a variety of rural settings and with diverse groups of individuals for such purposes as direct instruction, instructional support, management, and staff development.

Obtaining Service Delivery Information

The ACRES Rural Bulletin Board is administered by the American Council on Rural Special Education (ACRES). This bulletin board is part of the SpecialNet telecommunication system operated by the National Association of State Directors of Special Education. Any person or agency having access to SpecialNet may post information on the ACRES Rural Bulletin Board.

The Bulletin Board provides information about conferences on rural special education, successful practices in specific types of rural subcultures, rural job referral services, federal and state policies that affect rural handicapped individuals, the ACRES Resource Network, and recent publications on rural special education. Readers are encouraged to use its electronic mail capabilities to communicate directly with other users.

The National Rural Independent Living Project of Murray State University operates computerized resource systems in rural communities across America. The project locates and makes available resources that enable disabled persons in rural communities to live independently (transportation, assistance in the home, etc.). Each community system has a self-contained local resource system plus access to a national resource and information exchange system.

Instructional Programming Information

The North Slope Borough School District of Alaska uses a computer-assisted management system to organize special education programming. The system assists in development of the IEP and generates required reports. The computer program handles the repetitive paperwork aspects of creating and managing IEPs.

For example, district administrators developed programs that linked many IEP goal/objective statements to assessment instruments. This provided a criterion-referenced inventory of performance analysis on more than 200 key skills in reading and math. The computer program also included content areas ranging from study skills to sensory perception skills.

Gathering Data for Prescriptive Programming

A Head Start program in Otsego County, New York, uses videotapes in which a child reacts to a structured sequence of situations as input for prescriptive programming. Children involved are located in remote areas, and the videotapes are sent to and viewed by staff at a more centralized rural facility. Their input is used by local personnel for planning prescriptive programming for the child and for locating agencies which can best provide appropriate services. The tapes become a permanent part of the child's records against which subsequent recordings are compared. Testing the child in a home-school situation eliminates clinical aspects which often affect performance.

Parent Training

In a program in Newfoundland, videotapes are the primary vehicle for training parents of children with hearing impairments. During a four-day residential workshop for these remotely located parents and their children, parents view teaching videotapes. Training videotapes are later sent to the families on a monthly basis for use with their loaned videotape playback units. An auditory trainer is also furnished to parents for use at least once per day in one-to-one language teaching sessions with children, as described in the videotapes.

The program has tremendously reduced the number of staff needed for home visits. A visiting teacher went to each home once per semester and conducted weekly telephone counseling sessions with parents. Considerable improvement was noted in parenting behavior and child performance.

Parent Communication

Strategic placement of CB radios was an inexpensive approach to communicating with parents in rural Appalachian "hollers" that are hard to reach because of their terrain. The excellent natural communication system allowed relatively quick access to parents and provided a needed and reliable way to carry messages. More sophisticated "instant" communication systems for service providers and their families use telecommunication.

Increasing Curricular Offerings

A high school in Littlefork, Minnesota, facing a decline in quality because of dwindling school population, inflation, and fewer resources, designed a system offering 178 courses to 78 high school students. Four outside resources, typically used as supplements to courses, were combined to make one curriculum package. These included computer courses, correspondence courses, audiovisual resources, and video tape recorders.

The district set aside a classroom in the high school for its "one-room schoolhouse" and equipped it with study carrels, computers, and other electronics. A manager uses diagnostic records, counseling, contracts, and other student learning devices. Individualized learning goals and styles are emphasized. Resources used in the center have been reported to be cost-effective (e.g., cost per hour for a computer-taught course is $5.49). Discipline problems have been exceptionally low because of a high level of student motivation.

Saving Staff Costs/Labor Intensity

The need to reduce the numbers of professional personnel required was the initiative for a short-staffed remotely located learning center to rely heavily on the use of technological media and programmed instruction. A model designed by Willett and Swanson (1979) used ten learning areas of individualized instruction for 1200 rural students.

Each learning area corresponded to subject matter and was supervised by a resource specialist or a special service teacher. A teacher-senior for diagnosis and curriculum supervision and an administrator completed the professional staff of 12 for this learning center. Local paraprofessional personnel included 18 adults and 22 students. The number of student workers and paraprofessional staff made the project much less · professionally labor intensive.

Several types of hardware and software were available at each learning center, and students worked individually through prescribed program materials which had built-in evaluators and reinforcers. Staff reduction paid for a large portion of necessary technological and other media, and the model was judged cost efficient.

Instant Communication/Feedback

Telecommunication systems allow administrators to participate in case conferences without being physically present. This is particularly valuable when responsible administrators are located great distances from the site of IEP meetings and service providers. Some such systems are implemented at the district level.

A state-wide audio teleconferencing network interconnects educational providers and receivers in isolated, rural areas of Montana. The system uses live interactive audio with occasional computer networking to provide programming to small, rural, isolated educational institutions and communities across the state. Housed at Eastern Montana College, the system serves 47 sites, including schools and other community agencies.

Educational offerings are available at all levels, including junior-senior high school courses, college courses, and inservice coursework for K–12 teachers. State-wide educational meetings held using this system eliminate expensive and time-consuming travel. Electronic mail systems have enabled the agency delivering services and its supportive/monitoring agency to communicate instantly regarding problems, potential resources, and so forth.

Allowing Students to Stay in Their Communities

For years, the small populations of school-aged children in Alaska made it necessary for many communities to send their special needs and high school students to larger communities for instruction. Now, satellite instruction to remote communities has enabled many Alaskan students to stay in their home communities instead of attending residential facilities. A continuum of services has been designed ranging from totally home-based education with satellite instruction to short-term or long-term boarding school instruction.

Serving Homebound Students

Homebound students may be served via telecommunications through a telephone hookup in the child's home. This also increases communication between the student and teacher about learning difficulties.

A television placed in the student's home, depending upon the sophistication and resources of the geographical area, can be used to transmit educational programs designed/produced by the state or district. Alternatively, the classroom setting can be broadcast to the home. Broadcasting may occur via one-way audio (didactic) from class to home or two-way audio (interactive instruction).

Challenging Gifted Students

The advanced studies of 8 to 12-year-old gifted students at Calhoun County High School in Grantsville, West Virginia, include introduction to computers and programming, telecommunications systems, and programmed instruction. Project REACH (Raising Educational Achievement by Changing Horizons) includes a supervisor for special education and a teacher/program facilitator as sources of support.

SUMMARY

Technological equipment, information, experience, and expertise offer tremendous potential for rural administrators, educators, and disabled students. The use of modern technology assists in overcoming serious service delivery problems associated with sparse populations, scarce resources, and difficult terrain. Rural school and related agency networking has already rapidly increased, and numerous interagency agreements to share equipment among rural areas have emerged.

Technology can strengthen ties between rural community and school. In fact, it can actually assist rural schools in shattering the stereotypes of stagnant rural communities and school systems. The potential for application of emerging technologies is limited solely by the imagination of those planning and implementing them.

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Using Instructional Television to Support Beginning Teachers in Rural Isolated Communities

Presented at the American Educational Research Association
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Using Instructional Television to Support Beginning Teachers in Rural Isolated Communities

Teaching is a complex profession requiring a combination of artist and scientist in its most successful practitioners. Traditionally it requires new professionals to perform the same tasks at the same level of competence as the seasoned veteran in the classroom next door. Complicating matters further, teaching, in contrast with other professions, is practiced largely in isolation and provides few opportunities for formally inducting newcomers into its ranks. The literature and empirical research on beginning teachers indicates that many aspects of teaching cannot be learned or experienced during the preservice university program. Some aspects of teaching **are only experienced as an individual becomes a new teacher--** **alone in the classroom**. Consequently, beginning teachers report--

- feelings of isolation and insecurity,
- problems with classroom management,
- lack of skills in evaluating students and communicating with parents,
- and, a basic inability to blend into the social structure of the school. (Huling-Austin, 1987)

It is clear that many new teachers leave the profession when their frustrations peak, resulting in an attrition rate of **almost 40% of all teachers by their second year.** (The Governor's 1991 Report on Education, p. 37) Even more alarming is the evidence that the best teachers may be the first to leave. (Schlecty & Vance, 1983, 1981)

Difficult as the initial year of teaching is for all beginners, the first year is especially stressful for the rural teacher, who in addition to the isolation of the profession is dealing with the isolation of his/her new community. Along with inadequate instructional materials budgets and long hours on the job with numerous extracurricular activities, new rural teachers soon learn that there is little or no money to connect them with programs of professional growth that could help them to help them deal effectively with the stresses and strains of this multitude of personal and professional changes.

California State University, Chico has developed a program of support for beginning teachers that assists them in making the transition from effective student to effective, long-term teacher. This program, the Induction for the Beginning Teacher Program (IBT) is a multi-faceted program which is, in part, delivered to the vast, isolated area of rural Northern California via instructional television. The program is described below.

Induction for the Beginning Teacher Program

New teacher retention is a major concern in the rural areas of Northern California. Some counties report that 100% of the new teachers who come from outside their geographic areas, leave the profession before they have completed two years of teaching.

The Induction for the Beginning Teacher Program (IBT) was developed during 1987-88 by the Institute for Advanced Studies in Education, California State University, Chico (CSUC) in collaboration with University faculty members, teachers and administrators from their 14 county 36,000-square-mile service area in remote, rural Northern California. The IBT features a comprehensively structured and technologically delivered program of support and skill-building that is learner-centered.

Beginning teachers are paired with experienced teachers who are trained to be peer coaches. Both beginning teachers and peer coaches view and participate in monthly live and interactive televised (terrestrial microwave) seminars in their local area. Peer coaches support the beginning teachers' implementation of IBT seminar concepts through classroom observations and feedback throughout the year.

IBT Philosophy and Goals The underlying philosophy of the IBT is that beginning teachers have the talents they need for developing into successful long-term teachers if they are provided with a program which allows them to grow into the profession. Experienced teachers provide support and a safety net for experimentation to their junior colleagues while enjoying the opportunity to view their own classroom practice through new eyes.

The major objective of the IBT is to improve the skills and knowledge base of beginning teachers by providing a support system that will--

- improve teachers' instructional abilities,
- enhance school climate and job satisfaction by reducing professional and geographic isolation,
- model professionalism,
- provide the opportunity for professional growth,
- teach self-assessment,
- improve teacher retention rates,
- retain the best teachers, and
- provide the best educational experience for school age learners.

Another major objective of IBT staff was to serve its constituency in a manner that would facilitate their participation and encourage on-going interaction. Staff chose to utilize instructional television to link the resources of the University with students who are hundreds of miles removed. Without the instructional television component, many teachers would not be able participate.

Structures for Implementation The structure of IBT has proven effective in accomplishing these goals. Based as it is, in the new teacher's own classroom, this structure has all the components necessary for long-term retention and changes in the classroom.

- Each beginning teacher is paired with a successful experienced teacher, preferably from the same grade level, content area, and school. This pair forms a teaching team.
- The experienced teacher is trained by the Program in peer coaching and observation techniques.
- The teaching team attends monthly seminars both on-campus and at local Instructional Televisions for Students (ITFS) sites. ITFS is CSU, Chico's interactive microwave television system that links the campus to the 14

Northern California counties it serves. ITFS allows teachers to participate in the IBT without having to drive up to six hours to attend all sessions on campus.

- Following monthly seminars, each teaching team develops an action-research plan for implementing the seminar's concepts in the beginning teacher's classroom.
- Peer coaches observe their beginning teachers on a weekly basis, either in person or on videotape, to reinforce the implementation of the action-research plan.
- Following each observation, the beginning teacher and peer coach hold a post-observation conference to review the successful elements of the beginning teacher's performance, and to plan the next logical step.

This structure enables the teaching team to focus on specific applications after each seminar. The teaching team plans together for this learning, and participates as a team in implementing the plan, evaluating the results, and projecting future action. Effort is devoted to identifying successful experiences, allowing the beginning teacher to learn from what he/she is doing right. This structure offers safety to the beginning teachers so that they may experiment and find sound instructional techniques that work for them. The trained peer coaches on-site further link beginning teachers to the professional teaching community at the local level.

The on-going internal program evaluation concentrates on refining program content and delivery effectiveness as well as reinforcing class assignments. An IBT manual and quarterly newsletters spell out expectations, list additional resources, and link the sites, individual participants, and administrators.

Program Results

The IBT will begin its fourth year of operation in Fall 1990 with an expected enrollment of 150 teachers. Nearly 300 teachers have completed the Program thus far.

The Program has been deemed successful because participants are making positive changes in their classrooms and because the retention rate of new teachers in rural northern California is improving. The program has been able to meet the needs of the smallest, most isolated school district as well as the largest, most suburban school district in the service area. A great portion of the success can be attributed to the structure of the Program and the effective use of instructional television which enables all teachers to be a part of the Program.

The effectiveness, impact, and benefits of the IBT have been and continue to be carefully studied and documented for increased program efficiency and effectiveness. The comprehensive program evaluation plan includes a qualitative review of each individual seminar and implementation period for appropriateness and effectiveness of program content and process impact. A comprehensive final evaluation provides information on overall program impact. Some of the significant findings regarding the Program that have emerged from and have enhanced the continued effective use of instructional television include the following:

- Strong bonds develop between each beginning teacher and her/his peer coach. The beginning teacher feels that the partnership is safe and knows that both parties are committed to excellence. A strong comraderie across teaching teams also develops. Isolation at the school site and within the region is reportedly greatly reduced.
- Participants feel a strong sense of belonging to the Program. All teachers report that they benefit from their interaction with the teachers from other schools. Beginning teachers are amazed, and in some ways relieved, to find that other beginning teachers and sometimes peer coaches experience some of the same difficulties they do.
- Beginning teachers' and peer coaches' self-esteem and job satisfaction have increased dramatically, in part because the program provides positive feedback about their teaching. The IBT provides support and assistance for improvement and focuses on the positive qualities and skills of the teacher.
- Beginning teachers in the IBT feel successful because they are able to work on one thing at a time and see the impact of their actions in each component on which they are

working. They find this approach to be extremely beneficial. Each time beginning teachers make a successful change, they are able to describe up to five corollary changes that follow from it. All beginning teachers and peer coaches report seeing significant improvement in their effectiveness as teachers--attributable to the IBT.

- Both the beginning teachers and the peer coaches cite numerous examples of how their instructional abilities have improved, making them feel more confident and comfortable in the classroom and therefore more effective. They observe that as their own confidence increased, their students' achievement increased.
- Retention of experienced teachers in the classroom has emerged as an unexpected benefit of IBT. A large number of experienced teachers who register for the program as peer coaches suffer from teacher burn-out. They enter the program hoping it will provide stimulation and new motivation for them. The program has proven its value in giving experienced teachers the renewal and rededication to want to stay in the classroom.

IBT instructional and administrative staff further reinforce the supportive aspects of the program by making site visits to the schools of participating beginning teachers where they observe and confer with the participants and meet with their administrators. Individually tailorod instruction and teaching team technical assistance is provided during these site visits. In addition, feedback from program participants is obtained and used to further refine seminar offerings to meet the needs of current IBT beginning teachers. IBT program staff are able to see first-hand the teaching conditions each participant experiences. Thus, the staff is able to suggest alternative strategies to individual participants that help mitigate negative conditions and capitalize on positive ones. Seminar offerings are also fine-tuned to reflect this input. In this way, IBT program staff are able to extend additional personal support and validation to both the new teacher and peer coach as important and valued members of the profession.

Recommendations for using Instructional Television for Professional Development in Rural Isolated Communities

Instructional Television is an exceptional educational resource for professional development programs in rural, isolated communities and schools. Terrestrial micro-wave or satellite, instructional television can be used cost-effectively to include teachers and students from geographical areas that are difficult to reach through other delivery modes.

Instructional television does not stand alone, however. The process used to structure the medium for advantage (before, during and after) is as important as the content. Participants must be made to feel that they are a part of the program/class and that program personnel have as much commitment to the participants, as the participants have to the program. This can be accomplished through several means.

Before the Program begins, if at all possible, have participants get together to meet each other, to establish a sense of community and commitment, and to set the structure and tone for participation. This increases interaction during the instructional television component which keeps participants actively engaged, and encourages their collaboration.

Be clear about the objectives and structure of the program long before it begins. Prepare participants for the structure and content so they understand intended outcomes and the program objectives, and then deliver content relevant to these.

Structure the program to have participants work in groups or teams. Team work will empower the learners and generate a greater instructional impact.

Set the tone for interaction. Design program content to include many structured assignments that teams work on together. If the students know that everyone will be speaking during television sessions, they will think of calls into the studio from viewing sites as interaction more than as "interruptions".

During the Program, use facilitators at the viewing sites whenever possible to add the personal touch and to facilitate participant learning. Showing pictures of participants during welcomes and during call ins also adds a personal touch.

Present information sequentially. Participants viewing from afar can easily feel like outsiders when they get lost. Using visuals and manuals facilitates following along.

Include lots of activities for the teams to work on together. Participants will feel that they are a part of the class even though they are a great distance from class. Make sure class activities relate to what you want participants to do after class. If your objective is to make changes in participants' classrooms, make sure activities relate and can be transferred to the classroom.

Structure interaction so all sites get equal air time.

Make sure the presenter looks into the camera. Excellent eye contact with the camera helps all participants feel like they are a part of the class without isolating participants in the studio.

After each instructional television session, send an evaluation questionnaire that reinforces what participants are supposed to do when they get back to their classrooms as well as providing information for improving program delivery.

Demonstrate your personal interest in participants by.making telephone calls, writing letters, and conducting site visits as often as possible. Design and use a letterhead that identifies participants as members of your group.

Connect participants from the instructional television sites with newsletters that spell out who they are and what they are doing to implement the program concepts.

Conclusion

Without the use of instructional television, many rural teachers do not have access to professional development programs. Their opportunities for refining instructional skills and exchanging information with fellow practitioners are demonstrably more limited than for teachers in urban settings (Little, 1987). Instructional television in tandem with a comprehensive support design acts to bridge this gap allowing large numbers of participants to be enrolled in professional development programs without loss of program quality.

The down side of instruction over television has been that television instructors receive harsher evaluations than those who teach in person even though studies indicate that learning is no different between off-site and on-campus instruction. More than anything else this demonstrates a crucial need to install appropriate mechanisms for personalizing program content and delivery before, during, and after instruction to increase the attractiveness of television learning. It is clear, however, that the cost of going to these extra lengths to produce an effective instructional television program, is far less than that incurred by districts in yearly recruitment of teachers--not to mention the costs paid by students in lost educational opportunities.

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Information Technologies and Rural Development in the 1990s

By Don A. Dillman and Donald M. Beck

The information age, dependent on telecommunications and computer technology, holds promise for rural development. However, rural communities are also in danger of being passed by if they cling to old ways and attitudes.

Rural communities in the U.S. have experienced three eras of social and economic organization in this century (Figure 1). These are the eras of community control in the first third of the century, mass society in the middle third, and now of information (1986a, 1986b, 1986c).

The Community Control Era

Prior to 1920, rural life was community centered. People seldom could or needed to venture outside their home communities. Rural communities tended to have small and homogeneous populations of farm families or people dependent on agriculture. Common churches, schools and social activities imposed community norms. "What will the neighbors think?" was a powerful agent of behavioral control in most rural communities.

Farms and most other businesses were family owned and operated. Rural communities were largely self-contained and a few local leaders handled transactions with the outside world. Community development was by self-help projects and local resources. Churches, medical facilities, schools and social welfare agencies were locally initiated. Rural areas were relatively isolated due to poor transportation and communication facilities, thus reinforcing community self-sufficiency.

Mass Society

The mid-20th century witnessed an assault on tightly knit neighborhoods and communities on nearly every front. Automobiles, paved roads and telephones dramatically expanded personal mobility and social contacts. More people could afford to travel. National corporations routinely transferred local business managers. The expansion of educational opportunities and military experiences opened the nation and the world to rural residents.

The U.S. became a mass society. Hierarchies became the model for businesses and social service agencies. Local representatives reported to regional representatives and so on up the corporate ladder. The federal government increasingly extended its reach in American life, from education to transportation.

The building of a mass society produced much homogeneity. People across the United States ate Cheerios or Wheaties for breakfast, drove Ford or General Motors cars to work, and watched the evening network news. The same products were consumed in Havre, Montana, as in New York City.

Rural communities were no longer isolated from urban centers. Relative economic independence was replaced with tight knit interdependence. Rural community development efforts centered around attracting large industries or tapping federal and state funds for large rural

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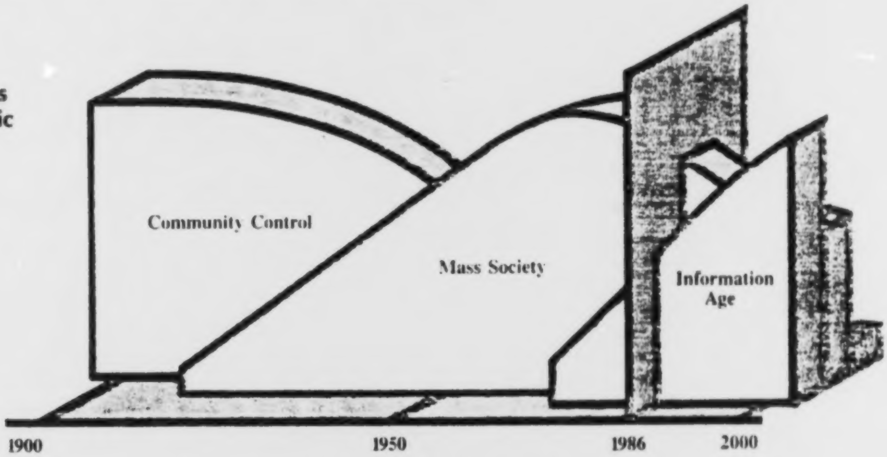
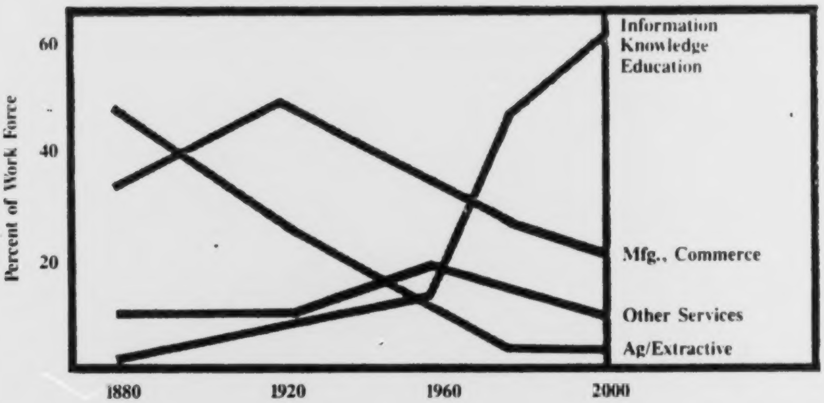
Figure 1
Strength of Three Eras of Social and Economic Change



Reproduced from Dillman and Beck (1986).

Figure 2
United States Work Force Distribution



Reproduced from Dillman and Beck (1986). Based upon: Cleveland, Pub. Adm. Rev., 1985.

development projects. Rural community development efforts were largely designed and financed by outside interests and aimed at standardizing services nationwide.

The Information Age

We are now making the transition into the information age. Dramatic improvements in computers and telecommunications are enhancing our ability to identify, sort, retrieve, transmit, create and apply information. Compared to previous eras, the information age is advancing with phenomenal speed (Dillman 1985, Masuda 1980, Dizard 1982).

The information age means having precise information when and where it is needed. Information is being substituted for time, labor and energy in the production of goods and services (Hawken 1983, Spreng and Weinburg 1980, Castle 1980). Information is a raw material as well as a product. The information society overlaps the production, distribution and consumption of tangible items. As Harlan Cleveland notes, agriculture and industry progress by producing more products faster while using fewer people, less energy and fewer natural resources (1985). This use of information underlies our movement from a mass society to an information age society of options, where multiple lifestyles and modes of doing things coexist (Naisbitt 1982).

The substitution of information for other resources has been going on for decades. What is new is the degree to which this is happening and the kind of knowledge that is being used (Cleveland 1985). Throughout this century, information has been used to encourage the substitution of energy and natural resources for labor. Now information is being substituted for all three.

Airline travel is an example of how information is substituted for labor and energy. Through today's computer systems, flight and seat reservations can be confirmed within seconds, even for flights originating in other parts of the world. At the airport check-in, boarding passes for that flight and any connecting flights are typically issued, eliminating further paperwork. Computerized reservations and check-ins require less labor. Monitoring of anticipated flight loads allows for efficient use of aircraft and fewer wasted meals. The incredible variety of fares that encourage full, and therefore, fuel-efficient flights could not be managed without today's computer-telecommunication systems. Thus, information technology has reduced energy consumption and labor costs throughout the air travel industry.

The information age also means greater selection. We are approaching the day when no two cars in the United States will be identical. Computerized assembly lines make it as easy to customize as to mass produce identical products (*Business Week* March 3, 1986). Information can save production costs because automobile and other factories need no longer maintain huge inventories and, instead, may schedule components to arrive only hours before they are used on the assembly line.

It is now common practice to produce a few products, see what sells and then shape products to consumer preferences, thereby substituting rapid communication and assembly for warehouses and mass production. Tomorrow's electronic catalogues are more likely to be attached to a production line than to a warehouse. Thus, information systems can be substituted for other production inputs, so that the products are shaped to individual preferences and needs.

The information revolution has helped usher in a true world economy. In our global society, in which goods and services traded among countries doubled from $1 trillion to $2 trillion between 1976 and 1980, the United States is striving to maintain its manufacturing base by substituting information for other resources. New satellite communication technologies coupled with jet airline travel have decreased information and product lag time between the U.S. and other countries. The immediate transfer of information has enabled other countries to understand, project and meet U.S. consumer demand.

The Transition in Perspective

In less than a century, three distinctly different eras of social and economic organization have each required different ways of applying technology and, more importantly, of thinking. The information era brings massive changes, only a few of which can be considered in this paper. What we will discuss are implications for the creation of jobs, one of the major objectives of rural development.

Throughout this century, information has been used to encourage the substitution of energy and natural resources for labor. Now information is being substituted for all three.

- **Jobs Are More Likely To Be Created by Services Than Natural Resource Extraction or Manufacturing.** In 1880, agriculture and manufacturing employed 86 percent of the U.S. work force, but by 1975 that proportion had dropped to only 33 percent (Cleveland 1985). By 2000, it is projected to drop to 24 percent. In contrast, the proportion of the work force that deals with information, knowledge and education has risen from 2 percent to 50 percent and is projected to jump to 66 percent of the American work force by 2000 (Figure 2). Some 90 percent of the new jobs created from 1970 to 1980 involved information or service activities.

Peter Drucker (1986) describes as a fundamental change in the world economy, the uncoupling of employment from food production and the exploitation of natural resources. This uncoupling is due to more efficient food production and less dependence on material-intensive products and processes for industrial production. As a result, employment in manufacturing has grown little the last several years.

- **Jobs Are More Likely To Be Created by Newer, Smaller Organizations Than Larger Ones.** It may well be that smaller firms have a competitive information edge over larger firms (Meredith 1987). In the mass society, large organizations clearly had an information advantage, being able to collect and distribute specialized information for their own use. The information revolution means that information about markets, production, technologies and financial trends can be obtained as easily and quickly by small organizations as large ones. In fact, the hierarchies of large organizations may get in the way of passing information back and forth. Smaller companies may, therefore, be in a better position to respond to market changes and adopt new technologies.

- **Mass Production Industries, Including Agriculture, Are Not Well-Equipped to Compete in the Information Economy.** The U.S. auto industry of the 1950s and 1960s, with its emphasis on large look-alike cars, could be described as the prototype of mass production. Today the auto industry offers hundreds of models which can be purchased in thousands of variations. In fact, discovering two identical cars would be considered an oddity, so responsive has the auto industry been to individual consumer preferences.

Information technologies make production of just a few products not only feasible, but the norm. The ultimate factory, described (*Business Week* March 3, 1986) as a computer-integrated manufacturing plant using advanced machine tools to produce a custom product and deliver it anywhere in the U.S. overnight, is becoming a reality. Mass production industries will simply not be able to compete in such an economic and technological environment.

In contrast to the preceding eras, the information age and the corresponding rise in importance of entreprenurial activities require access to a wider spectrum of information sources.

American farmers are often seen as individual proprietors making their own decisions. In reality, however, production of many agricultural commodities, for example, wheat and corn, represents the last of our giant mass production industries. The essence of mass production is to produce essentially the same product for all consumers. Because the agricultural production system is structured to produce the same product at low cost, which is presumably vital to success, individual consumer preferences are for the most part ignored. Several factors encouraged this form of farm production. During the era of the mass society, American farmers were encouraged to adopt the same high-yielding varieties and to grow them in the same way. Standard recommendations from Cooperative Extension and other information providers and the near singular emphasis on the highest possible yields encouraged homogeneity.

In addition, the heritage of the community control era, when farmers compared themselves to neighboring farmers, further encouraged uniform means of production. The prevailing marketing system of this era resulted in each farmer's grain being dumped into community elevators and ultimately into community railroad boxcars and ocean barges. This precluded differentiating one farmer's product from that produced by other farmers. As a result, there was no incentive for farmers to track their own products or receive specific consumer feedback.

The little consumer feedback a farmer did receive was aimed at encouraging small changes in the standard product and not at satisfying different consumer demands. This mass production system is still the norm, held in place by government subsidy programs that focus upon yield per acre and mass grading standards that fail to recognize the needs of market segments. It is hard to imagine a system better designed for a mass society or more inappropriate for an information age economy.

- **The Information Needs of Businesses and Ways of Meeting Those Needs Are Fundamentally Different Than in the Past.** The ability to send and receive all types of information is a prerequisite for rural community development in the information age. This is a departure from the rural community development requirements of either the community control or the mass society eras. In the community control era, where rural communities were relatively self-sufficient, most of the products and their demands were generated locally, and mostly local information was needed for economic development. The mass society brought about the need for access to centralized information sources. To attract and maintain large industries and government projects (often tied to resource extraction), rural communities needed to have links to national firms and the federal government. In contrast to the preceding eras, the information age and the corresponding rise in importance of entrepreneurial activities require access to a wider spectrum of information sources.

A manifestation of the changing information needs associated with the three eras can be found in the evolution of telephone connections. In the community control era, it was most important that reliable local connections be installed, since businesses needed to communicate with customers in their immediate locale. Likewise, because most social interaction revolved around the immediate community, even social calls were local. As the mass society evolved, long distance connections became increasingly important. Local branches of businesses, industry and government departments needed to contact their respective headquarters. As the population became more mobile, the demand for long distance increased as people sought to maintain social ties despite frequent moves. For these reasons, emphasis in this era was on long distance verbal communication. The information age has placed new demands on telephone lines, such as data transmission and conference calls. More and more businesses need to transmit vast amounts of data. In 1985, 10 percent of the phone industry's revenue came from data transmission (*Business Week* September 15, 1986).

The decentralization of businesses and government bureaucracies now requires that many parties be linked together, hence the increased need for conference calls and computer networks. The evolving use of telephones demonstrates the changing information needs of the three eras.

- **Success of Businesses Depends on Quality of Local Information Infrastructure.** Since new businesses are likely to be information intensive, it follows that they need a strong information infrastructure. Fiber optic cables, digital switching, laser disks, satellite communication, word processors, facsimile transmissions and computer-integrated manufacturing are now as essential to economic development as interstate highways, industrial parks, water and sewage systems, and assembly lines were to the mass society era.

- **The Role of People's Residential Preferences in Deciding Location Is Potentially Greater Than in the Past.** In the community control era, people lived where the resources were; they had no choice. Businesses located near where people lived and tended to be locally owned. The mass society witnessed the growth of large companies and manufacturing plants. The size of the plants dictated that they be in or near cities to have access to a large labor pool. For workers, career opportunities meant living in a metropolitan area. The information age, in which manufacturing plants are smaller and services drive the economy, might allow residential preferences to play a larger role than in the past. In theory, information age industries can locate wherever there is telecommunications infrastructure. Assuming infrastructure is constant, then residential preferences of workers can potentially play a bigger role as to where new businesses locate.

Is Rurality Still a Barrier to Success?

Throughout much of this century, rurality has been a formidable barrier to economic and social development. The important affairs of society occurred in urban areas. In the mass society, rural areas were the ends of the distribution lines, the bottom of the prevalent hierarchies and, except for certain natural resource industries, not places where much wealth was accumulated.

It has been argued that an essential characteristic of information technologies is that they are neither centralizing nor decentralizing (Mandeville 1983). Cleveland (1985) describes the dissolution of the hierarchy of geographical location by the information era and the passing of remoteness as one of the major trends of our times. Information technologies have the ability to overcome remoteness which in the past has excluded rural people from important societal decisions and activities.

Favorable trends

Certain trends we have just described suggest that entry into the information era may aid rural development. Large organizations tend not to locate in rural areas, so the information age trend towards smaller organizations may bode well for rural areas. Information intensive services and small-scale industries may not strain the physical infrastructure (e.g. water, sewer, fire protection) of small communities. As a result, these industries can locate in rural areas more easily than the large-scale industries prevalent in earlier eras. Additionally, in the past, service industries needed to locate near large manufacturers they served. Now, however, service industries increasingly serve wider areas beyond urban industrial areas (Birch June 1987; Beyers, et al 1986). Central cities have no monopoly on answering 800 numbers, processing insurance claims, writing newsletters or developing software. The emergence of small manufacturing industries, export-oriented service industries and electronic cottage industries means rural areas may increasingly become industrial sites (Dillman 1985). Additionally, the daily presence of *USA Today*, *The Wall Street Journal* and Federal Express vans in rural communities suggests that "rural" is no longer synonymous with "remote."

Five Unanswered Questions

However, optimism that these trends can be capitalized upon to foster rural development must be tempered by consideration of a number of unanswered questions. First, if this paper had been written a decade ago, it would have listed a definite residential preference for rural living as a reason for optimism. However, many of those who expressed such a desire and who acted on it during the resurgence of rural growth in the 1970s, had rural roots and were seeking a return to rural life (Dillman 1979). Currently, we simply do not know the extent to which preferences for rural living exist among a younger, largely suburban generation. Any preferences for living in rural locales may not be for those rural communities currently in decline. If free to choose, people seem more likely to opt for places with desirable environmental qualities which would exclude most of the agricultural, mining and forestry communities now in decline. Such a trend would prove discouraging for most rural areas since residential preferences are increasingly an important factor in decisions regarding where industries locate (Birch 1984, May 1987).

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Second, although rural Americans are often entrepreneurs, the kind of entrepreneurial skills important in the past may not fit the information age. Information age entrepreneurs must be able to identify niche market opportunities, produce to consumer specifications and respond to consumer feedback. The continued "mass production" mindset of most of today's rural inhabitants inhibits the development of these needed entrepreneurial skills. In short, the information age demands new kinds of entreprenuerial skills not prevalent in rural America.

TABLE 1
PERCENT OF WASHINGTON STATE HOUSEHOLDS WITH SELECTED TELEPHONE SERVICE (1986)

	Urban Counties		Rural Counties	
	City	Country	City	Country
Private Line	97	96	93	76
Touchtone	71	64	53	42
Call waiting	21	17	6	4
Telephone answering machine	20	14	10	11
Telephone calling card	62	51	48	54

Source: Dillman, Scott and Allen (1987).

TABLE 2
PERCENT OF WASHINGTON STATE HOUSEHOLDS WITH PERCEIVED QUALITY OF SERVICE (1986)

	Urban Counties		Rural Counties	
	City	Country	City	Country
Poor quality of connections is a problem	13	16	14	18
Getting busy signals on long distance calls is a problem	13	14	19	19
Service is fair or poor	10	13	15	21
A long distance call is required to community most depended on for services	6	13	21	26

Source: Dillman, Scott and Allen (1987).

TABLE 3
PERCENT OF WASHINGTON STATE HOUSEHOLDS WITH SELECTED INFORMATION TECHNOLOGIES (1986)

	Urban Counties		Rural Counties	
	City	Country	City	Country
Personal Computer	21	16	13	12
Computer owners with modem	23	40	24	6
Cable television	53	45	78	30
Satellite dish	2	6	5	14
Video cassette recorder	49	58	38	45
Presence of more than four of eleven possible technologies	45	44	30	33

Source: Dillman, Scott and Allen (1987).

Third, rural America currently does not have and may not be getting the technical information structure required for full participation in the information age. A recent study in Washington state indicates that selected telecommunications services, quality service and other information technologies are less prevalent in rural areas than in urban areas. For example, as shown in Table 1, only 76 percent of the households in rural locales in Washington state had one party (private) telephone service compared with 93 to 97 percent in all other locations. Washington rural residents are also distinctly less likely to have touch tone telephones, call waiting and telephone answering machines. In addition, there is a slight tendency for rural households to report poor quality of service and have to pay toll charges for calls to the community they most depend upon for services (Table 2). Table 3 shows that, in Washington at least, rural households are also substantially less likely to have personal computers, modems for computers and, at least in the countryside, cable television. In contrast, cable televison is most likely to exist in households of rural cities and satellite dishes are most likely to be found in the rural countryside. Of 11 possible information technologies examined in the study, only 30 to 33 percent of rural households have more than four each, compared to 44 to 45 percent of urban households.

The data from Washington state suggest that information technologies are coming to rural communities at a slower pace than to urban areas. The nationwide data (Table 4) make it clear that private lines and digital switching, essential elements for computer to computer communication, are coming slowly to rural areas. Further, the broad array of programming available through cable television has yet to penetrate many rural areas of the United States.

A case study and survey of all businesses in three small rural communities in an agricultural region of rural Washington state amplifies these concerns (Allen and Dillman 1987). The two smaller communities studied had populations of 500 and the county seat of 3,000. A substantial portion of businesses, 28 to 35 percent in the two smaller towns, and 70 percent in the county seat, reported having computers, many of which are used for telephone communication (Table 5). Not all the businesses wanted to adopt computers: 19 to 28 percent of the businesses reported some pressure from suppliers or headquarters. An implement dealer reported a manufacturer required a dedicated telecommunication system costing $80,000 in order to maintain a franchise. A drug store owner reported that wholesalers only accepted orders placed via computer.

Also, information technologies in some cases eliminated jobs and in other cases created them. The number lost (11) outnumbered the ones that

TABLE 4
PERCENT OF RURAL COMMUNITIES WITH SELECTED INFORMATION TECHNOLOGIES IN THE UNITED STATES (1986)

		Census Region			
	U.S.	North East	North Central	South	West
One-party telephone service available to all households	82	91	82	82	74
Community served by digital switching equipment	44	39	42	48	46
Communities with cable TV	33	54	19	45	52

Source: Unpublished data from National Rural Community Facilities Assessment Study, USDA Economic Research Service Rural Business and Government Branch (1986)

TABLE 5
USING COMPUTERS BY PERCENT OF SMALL TOWN BUSINESSES AND INSTITUTIONS (1987)

	Town A	Town B	County Seat Town	Total
Approximate Population	(500)	(500)	(3000)	
Percent of businesses with computer technologies	35%	28%	70%	52%
Percent of businesses pressured to adopt computers	19%	28%	22%	
Number of local jobs gained or lost through adoption of computers				
Gained	5.5	4	0	5.5
Lost	1	1	9	11

Source: Allen and Dillman (1987).

had been gained (5.5). The jobs that had been gained were in specialized businesses that served a very wide geographic area, for example, such as selling specialized insurance. The loss of jobs occurred in two ways. In some instances, the computer had simply replaced workers who had done the work manually, e.g., inventory and ordering in grocery stores. In other instances, jobs were being shipped out of the community by telephone. For example, a newspaper sent stories to a typesetter in another city by computer modem. The typeset stories were then sent back by telephone for printing. These data suggest that the adoption of information technologies in rural communities is not a guarantee of growth. They can as easily be used to ship jobs out of a community as to bring them in.

The fourth issue that must temper optimism that rural communities can capture the benefits of the information age in order to foster rural development is more subtle. However, it is just as important as building technological infrastructure. For lack of a more commonly recognized name, we will call it the "information culture." The information culture of rural communities tends to place a high priority on modes and types of information more suitable for earlier eras than the present information age. Many rural citizens still look to their neighbors for approval or disapproval when trying something new. "What will the neighbors think?" remains a powerful deterrent to behavior in many rural communities. This tendency to look to neighbors for information prevailed throughout the community control era and into the mass society era. Farmers, who in a sense were assembly workers producing the same product, looked to one another to find the best means of producing their commodities. This tendency was supported by mass publications that provided standard recommended practices. We contend that this community control era mindset is still prevalent in most rural areas throughout America. As a result, rural people are less likely to hear about or try new ideas and technology.

Associating with the same people or at least the same families over several generations tends to encourage spending a greater amount of time on creation and consumption of local knowledge and less on seeking, sorting and using information about distant places and ideas. Information needed for entrepreneurialism, how to identify, supply and monitor niche market opportunities is information that will come predominantly from outside the community rather than over the backyard fence or from lifelong friends. The rural community is by its nature homogenous and more limited in its information content than are cities. Thus, rural communities are at a disadvantage in developing information age businesses because they fail to develop the elaborate business and social networks needed to compete in today's economy.

Cities may have a comparative advantage over rural areas to handle such rapid turnover of employees from one firm to another, simply because they have a larger and more diverse labor pool.

Fifth, the recent work of David Birch (1987) casts an ominous tone on the rural difficulty in adapting to the new economy. He likens today's economy to a turbulent thundercloud. Birch's tracking of 12 million business establishments from 1982 to 1986 shows turnover to be an essential characteristic of most industries. For example, while 5.2 million jobs were created by firms with up to 19 employees, 4.8 million were lost through closures. Importantly, 74 percent of the net jobs created by all sizes of firms were created by firms in this size category. Firms with 20 to 99 employees added 35 percent of new jobs, those with 100 to 199 employees accounted for 11 percent and those with 500 or more employees for 2 percent. Birch notes, for example, that 43 percent of the workers in the 20 to 99 employee category held jobs that were not there in 1982. Thus, rapid turnover is an important characteristic of the information age. The implication of this "rise and fall of everybody" for rural development is that rural areas may not be able to handle such turbulence. Cities may have a comparative advantage over rural areas to handle such rapid turnover of employees from one firm to another, simply because they have a larger and more diverse labor pool.

In summary, it is unclear the extent to which being rural presents barriers to social and economic development. However, it is clear that rural development will require efforts of a different kind than those that have predominated in the past. These efforts must involve more than building bridges, roads and sewer systems in search of hand-me-down manufacturing plants from cities. Similarly, rural development must involve more creative methods than trying to find new markets for the mass production of agricultural commodities, lumber, energy and metal ores. We believe rural areas must adopt strategies that respond to the changes brought on by the arrival of the information age.

Recommendations for Rural Development

The recommendations which follow do not represent a complete program for achieving rural development in the 1990s. However, from the standpoint of harnessing the capabilities of information technologies, they are exceedingly important.

- **Development of rural technical information infrastructures.** The nation needs to invest in rural technical information infrastructures just as it has in rural electricity, railway and highway systems. Indeed, telecommunications capacity for the two-way flow of information is to the information age what the building of interstate highways and long distance power lines were to the industrial age. A difficulty in achieving this goal is that digital switching, distortion-free fiber optic cable, adequate trunkline capacity, open network architecture and system reliability are no more visible or understood than the underwater movements of submarines are to a shoreline observer. We need to provide rural communities the capability to interact effectively with companies for which outsourcing can be done, software that can provide directions for computerized equipment, and, most of all, information sources that allow entrepreneurs to respond to new market opportunities.

The challenge facing rural communities is by no means separate from that facing urban America. Modern highway systems' success comes in part from the development of balloon tires that allowed vehicles, from freight trucks to motorcycles, to use roads simultaneously. Developing a system in which television signals, computer signals and voice communication can simultaneously flow through the same conduit is as critical to our era as balloon tires were to the earlier era. It also represents a critical political challenge for American society due to the pluralistic nature of our communication service development. The need for multipurpose cables is even more critical for rural America than for urban areas since the cost is higher for running different conduits over distances. This impedes the building of a rural information infrastructure.

As a society, we have not yet developed systematic means for identifying, describing and evaluating our information structure. In many ways, communication technologies remain a "black box" whose functions are intuitively obvious. However, when the "black box" does not function, we seldom know why; we only know that it is not working. When a small rural business in a remote community cannot place an order over the telephone, it is virtually impossible for it to know whether there is a local problem, a problem of trunkline capacity or something else. Efforts to improve the rural information infrastructure must be predicated upon the knowledge of existing infrastructure and its uses. This knowledge is sketchy at best and the need for systematic research is great.

When a highway bridge fails, the event and consequences are visible. The ground-breaking and ribbon-cutting for the new bridge will be covered by the media. In contrast, the breakdown and construction of telephone and information services is not open to public view. One of the most worrisome issues now facing rural development efforts is that the communication infrastructure of rural America will invisibly deteriorate while that of urban America is modernized for the information age. A decade or so from now, we may find rural America lacks infrastructure for development. Conceivably, the economic future of rural America could be jeopardized by benign neglect.

- **Development of human capacity for the effective use of information technologies.** Few themes have been more prevalent in the rural development literature than investment in human capital. This remains critical to rural development, although with a slightly different emphasis. The information sorting, computational word processing and learning skills offered by information technologies provide comparative work advantages in all fields. For example, even the careers of clerical and technical employees now depend upon learning and using information technologies daily. Rural companies, schools and local governments that do not equip and teach their employees or students information skills are systematically depriving rural communities of human capital critical to future rural productivity. Thus, it is important to invest in the computer and related technical skills of rural residents.

Another equally important dimension of human capital development is developing in rural residents a broader understanding of the world economy and commerce with different lands and cultures. The community control era has declined more slowly in rural than in urban communities, and many rural citizens cling to community norms that prevent adaptation. In the future, a rural community's existence will depend more on the experiences rural citizens have outside that community and the skills they develop for cross-cultural interaction with businesses and people in distant places, than with their neighbors. Therefore, in addition to technical training, rural residents must gain a global perspective.

Development of both the technical and cultural skills of rural residents will result in more information and increase their ability to act on that information. Future indicators of rural development might include counts of per capita daily long distance calls, machine-to-machine data transfers and business microcomputers.

Innovative Research and Demonstration Programs

One of the striking features of the information age is the speed it is coming upon us. The time from concept to working model has shrunken rapidly (Meredith 1987). Recently the state of Washington funded a project to explore the potential for establishing office industries in rural communities. The study will explore what infrastructure is needed and costs and benefits to businesses. The transfer of urban jobs to a rural area via telecommunications requires new ways of thinking by both businesses and communities. Demonstrations in partnership with urban businesses might explore the feasibility of such efforts.

In northeastern Minnesota such a project has succeeded. The Arrowhead Regional Commission, formed in 1984 to coordinate economic development, has sought office-sector employment, partly because many office jobs already exist in the area. The effort to improve telephone services, including fiber optics cable, critical to the development of a larger information industry, has apparently paid off. In one community, more than 100 people are now employed in preparing rebates, free samples and other promotional items for mailing throughout the country (Blazer 1987).

Conclusion

Perhaps the most ominous cloud hanging over rural development as we approach the 1990s is a shift from certain efforts being mandatory to their being optional. In the community control era, agricultural land and minerals attracted development. These natural resources were immovable, requiring talent and tools for exploitation to be brought to them. If rural communities are to prosper in the information age, it means bringing to rural areas both the materials to be processed (which may in itself be information) and the tools to do so. There is no inherent reason these "new" raw materials and the means for their processing should flow to rural communities. Developing means for this to happen is perhaps the most important rural development challenge.

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DEBI SUE EDMUND

Satellite TV connects rural classrooms nationwide

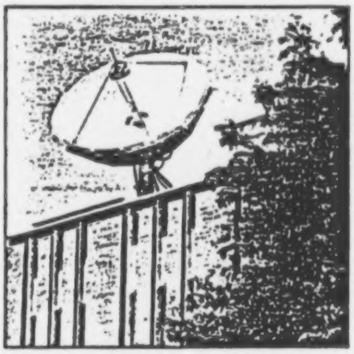
High school senior Christine Gordon listens attentively while Mrs. Riley, her psychology teacher, poses a question about the reliability of testing methods. Christine thinks for a moment, then ventures an answer. Mrs. Riley encourages her to elaborate. A typical American high school scene, right? Hardly. Christine is sitting in a classroom at Illini Central High School in Mason City. Besides the six juniors and seniors in the room with her, Christine's classmates include students from as far away as Happy Camp, Calif. Mrs. Riley is in San Antonio, Texas; she is also on television.

The Illini Central High School students are participants in the Illinois STAR School Program, Illinois' first statewide satellite education network. The program, now serving about 300 students around the state, went on-line last April. It is a joint venture of the Illinois State Board of Education (ISBE) and Western Illinois University in Macomb. The project in Illinois is part of the TI-IN United STAR Network, a federal grant program which required that partnerships be formed between local elementary and secondary schools, institutions of higher education and private business. STAR stands for Satellite Transmitted Academic Resources.

The STAR Schools Program enables students and faculty to receive courses and enrichment programs not otherwise available to them, according to Richard Haney, assistant superintendent for rural education at ISBE. Courses offered via satellite this fall included advanced math and science, several foreign languages and other courses that would attract only a small number of students in one school.

The live classes use an interactive two-way audio, one-way video satellite-transmitted system, which allows students to talk directly with teachers by phone. Students take tests and do homework assignments, sending them to the teachers by mail. An electronic writing tablet that comes with the satellite package even makes it possible for students to "step up to the blackboard." Whatever the student writes on the graphics tablet can be transmitted to the teacher, who can show other students what was written. Teachers certified in other subjects are present in the classroom to administer tests and provide support to the televised teacher.

Students also have access to enrichment programs. Programs being produced by WIU in their studios include a career and guidance program focusing on math and science, a live concert series featuring Illinois high school bands and a program on French culture filmed on location and presented entirely in French.


Western Illinois University

WIU and ISBE's partners in the STAR Schools Program include the University of Alabama, California State University at Chico, Mississippi State University, the North Carolina Department of Public Instruction, TI-IN Network of Texas, Educational Service Center Region 20 in San Antonio and the Texas Education Agency. Participating schools in Illinois have access to supplemental courses offered by each of these institutions as well as those broadcast by WIU and the TI-IN Network in Texas (a private corporation). WIU can also produce programming that is Illinois-specific, such as a course on the state's history, if schools request it. "We have Illinois money producing Illinois programming for Illinois schools," says Michael Dickson, executive director of the WIU-ISBE Satellite Education Network, which coordinates the STAR Schools Program in Illinois.

The U.S. Department of Education awarded a $918,326 grant for the 1988-89 school year to ISBE and WIU to establish 52 satellite receiving sites at rural schools and educational service centers. Second-year federal funding of $526,710 allowed 23 additional sites in Illinois to join the network for the 1989-90 school year. Most of the money was used for purchase of the satellite equipment installed at these sites. Last October, the Board of Governors authorized WIU to reallocate $840,000 from its existing budget over a five-year period to cover construction and installation of its satellite uplink facility.

The Illinois General Assembly provided additional help last spring. Besides approving H.B. 1227, sponsored by Rep. Bill Edley (D-95, Macomb), to change the school code to allow ISBE to offer credit for classes taken via the interactive satellite system, WIU received a half million dollars for the TI-IN project ($150,000 in general revenue funds via S.B. 281 for programming and $350,000 via the Madigan/Rock temporary income tax increase for updating studio and broadcasting equipment). But Gov. James R. Thompson vetoed a line item in another bill (H.B. 592) that would have provided $216,000 in grants to bring new districts into the network. Edley, who plans to introduce a similar bill this year, says, "I think some of the reticence was due to those waiting to see how well the system works."

The original 52 sites selected for the grant program were chosen from more than 100 applicants. Those 52 qualified as rural, remote school districts with fewer than 700 students and a relatively high concentration of Chapter 1 (educationally disadvantaged) students from low-income families. Federal grants cover only one year for qualifying districts.

Haney says TI-IN offers a cost-effective way to bring advanced courses to rural high school students. "Our prime goal is to offer courses that we could not provide any other way. We think this is an excellent opportunity for rural schools to be competitive with their larger neighbors."

> ***Another important question: Will the small school districts be able to afford the continuing cost?***

Districts that did not meet the guidelines for federal funding may also buy into the network by purchasing the satellite equipment and paid programming themselves. Currently, nine have done so, Haney says. "Our network will handle as many schools as would like to belong. The more schools we have, the better the programming we can give." School districts wanting to join the network can spread the cost over a seven-year period through a loan program offered by the Illinois Development Finance Authority.

Dickson and Haney both acknowledge that the program has its problems and its critics. The two biggest problems have involved scheduling and the academic preparation of some of the students, Dickson says. Since class periods do not start and end at the same times around the state, schools have had to be flexible. Because of the limited curriculum in a lot of these schools, some students, for instance, may not have taken the math courses they would need before taking calculus.

Some critics have expressed concern that the system would replace local teachers with television sets, but Haney denies this. "There is not, nor will there ever be, a teacher replaced by this program," he says. "These are courses that small rural schools cannot offer in their curriculum because of the number of students involved." Others have feared that the technology involved would prove intimidating. "Frankly, we've had a bigger problem with the adults than the students," Dickson says. "Their training with things like Nintendo, PAC-Man and computer games lends itself to this sort of thing. Rather than being intimidated, we find that the students are really turned on by it."

The program had to overcome traditional competitiveness in Illinois' education hierarchy. "Western Illinois University and the State Board of Education started as competitors," Haney says. "But we quickly determined that the best chance we had to put together a comprehensive program was to unite — not only Western and the Illinois State Board of Education — but with other partners around the country." The STAR School Program also competed with other technologies, according to Rep. Edley. Other options were investigated, including a fiber-optic cable program backed by the Illinois Farm Bureau and a two-way audio, two-way video sytem, but the TI-IN system was found to be the most flexible and cost-effective, he says.

Another important question: Will the small school districts be able to afford the continuing cost? After the federal grants expire, each district's costs will include an annual $3,650 fee, which covers the maintenance agreement for the equipment, tape back-up, access to enrichment courses and staff development programs, and an 800 number to call the teachers about special problems. An additional basic programming fee of roughly $250 per participating student per semester is assessed as tuition and paid by the district.

In Mason City, students and staff are enthusiastic about the program. "The one negative aspect so far is the cost involved," high school principal David Russell says. "But it's a trade-off. It's going to cost you some bucks, but we are offering five courses this year that we could not have offered otherwise." In the fall, 24 of the high school's 265 students were enrolled in the televised courses, and 25 are signed up for spring. These courses include astronomy, French, art history and appreciation, psychology and marine science.

Amy Hakman, a science and chemistry teacher who serves as facilitator for the psychology class in Mason City, likes the program. "If a student is absent for a day, we can tape the class for him. And the teachers are very charismatic. They present their material well." Matt Trabue, a junior taking the psychology course, says the class has captured his interest so much that he plans to pursue psychology in college. "At first it [the call-in function] was weird. Nobody wanted to ask any questions," he says. "But now, we use it all the time."

"We are very encouraged," Haney says. "The program is much farther along than we expected it to be at this time. Out of our 75 sites, we may have one or two that we will want to move at the end of the year because of [under]utilization. Two out of 75 is outstanding."

Not simply for students, the interactive television offers teacher training. The Illinois teachers interact live with nationally known consultants and other teachers in about 30 states. Dickson says, "We've had very heavy use of teacher inservice training . . . . used extensively for staff development in the areas of math, science and foreign languages. I think the biggest thing the teachers like about the system is that it provides them with educational opportunities themselves."☐

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DIGEST

Clearinghouse on Rural Education and Small Schools April 1989

Using Technology to Improve the Curriculum of Small Rural Schools

Digest EDO-RC-89-5

DEVELOPMENTS in two types of technology have important implications for curriculum and instruction in small rural schools. While both of these technologies are rich in promise for those interested in improving the curriculum in small rural schools, there are drawbacks as well.

This Digest reviews the promise as well as the drawbacks. It makes the argument that the most attractive applications involve combinations of the two types of technology in ways that depart significantly from traditional thinking about the delivery of instruction and the role played by on-site (sometimes called "proximate") teachers (see, for example, Cuban, 1986).

The two technologies involve microcomputers and distance education technologies. On the one hand, microcomputers are becoming a more familiar part of the educational landscape, and teachers are using programmed instructional materials more and more frequently. On the other hand, improvements in telecommunications make it increasingly easy to transmit instructionally useful images and sound over geographically forbidding distances.

Computerized learning programs

A critical feature of programmed learning packages, computerized or otherwise, can be their "stand-alone" feature (Levin & Meister, 1985). Stand-alone programs are completely self-contained in the sense that they do not require the presence or involvement of an on-site teacher. To the extent that effective stand-alone programs become available, it will be relatively easy to enlarge curricular offerings in small rural as well as in other kinds of schools.

Important questions concern whether or not stand-alone programs really are possible, desirable, cost-effective, or feasible.

In fact, it is not yet clear if the market for the kinds of stand-alone programs desired by small schools will be sufficiently large, even under the most favorable circumstances, to prompt their development (Carnoy, Daley, & Loop, 1986). Students may learn more thanks to the innovation, but unless the programs have a stand-alone quality they will not enhance the ability of small rural schools to enlarge and broaden their curricular offerings. Indeed, Walker (1983, p. 107) concluded that microcomputers would actually add to, rather than reduce, the costs of education.

If programmed instruction merely supplements on-site teaching resources (that is, if programmed materials with stand-alone qualities cannot be developed and widely used), their potential for making small rural schools more viable will be minimal. New course offerings will require additional teachers with subject matter expertise, just as is currently the case. And no teaching resources will be freed for other uses thanks to the arrival of programmed materials (Monk, 1989).

On the other hand, a simplistic view of what is required will not serve development well. The requirement for an on-site teacher is not an all-or-nothing matter. It is not so much a question of whether programmed instruction can succeed without any involvement of an on-site teacher as it is a question about the kind of skills and experience the on-site teacher will need to have. If learning programs can be developed which reduce, but do not eliminate the level of subject matter expertise required of on-site teachers, then there can still be considerable potential for improved curriculum and instruction in small rural schools. The possibilities for such improvement are enhanced if the use of programmed materials with some stand-alone qualities are coupled with use of the evolving distance technologies discussed in the next section.

Telecommunication technologies

Educators in the United States are currently showing great interest in two-way interactive instructional television and its potential for expanding the curriculum of small rural schools. Moreover, the range of technological options has been steadily increasing. It seems reasonable to expect this trend to continue. Numerous technologies, not just two-way interactive instructional television, make it possible to join geographically separated students and teachers, short of relying on daily transportation to increase proximate enrollment levels. Schools and classes can—and have increasingly—been linked together through the use of telephone lines, cables, and radio and television waves of various kinds (Barker, 1987; Batey & Cowell, 1986).

Even if distance technologies do become more sophisticated, more reliable, and less costly, important additional barriers must still be overcome. As Galvin (1986) demonstrated, schools using distance technologies to share programs must solve numerous problems. These problems range from the trivial (for example, agreeing on a common time for a class to be offered) to the more substantive (for example, achieving a stable balance in which each participating school feels like it is contributing to the shared enterprise). These are organizational or, in a sense, "political" problems, but they are at least as important as the technological problems (Batey & Cowell, 1986). The most important of the substantive problems, however, may be teacher training; that problem will be examined after an examination of what a productive combination of stand-alone programmed materials and distance technology might look like.

Toward a productive combination

Distance technologies, when they are coupled with the programmed materials described above, seem to offer considerable potential for small rural schools that are interested in improving their curriculum (Hobbs, 1985). To help readers imagine this potential more clearly, the discussion that follows develops an idealized example of how these two technologies might be fruitfully combined. Without some such vision, however, the research and development

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necessary to help move educational practice toward this potential is not likely to occur.

What might be possible? Consider a school with 25 students at each of four grade levels, 9-12. Assume the school is located in a rural and isolated area, is separately organized, and is governed by its own elected school board. The school employs four teachers and thereby has a teacher to pupil ratio that is unusually low for a small rural high school striving to offer a rich and specialized curriculum.

The four teachers in this school have been specially trained. They are generalists in the sense that their training placed emphasis on breadth rather than depth of academic and professional training. In fact their professional training has taught them to be managers of instructional resources, a form of training not unlike that provided to librarians.

These teachers understand the nature of how students learn different subjects. They can help students learn a wide range of subjects, including foreign languages, mathematics, science, literature, history, and geography. They do not have deep knowledge of each subject, however. Rather, they know where and how to access such knowledge and they know how to share it with their students.

Moreover, the classrooms have been equipped so that the necessary detailed subject matter expertise is readily at hand. One source is the stand-alone programmed materials described above. In addition, these teachers use programs that do draw upon their academic expertise, but which also require ready access to other resources. These other resources might take the form of a consultant on retainer who is hired to respond to calls (via telephone or television) or who might make periodic visits to the site (Wall, 1985). The outside consultant and the on-site teacher work together, developing the curriculum, managing the instructional process, and assessing student progress. Some teachers in this setting—depending on their skills, experience, and professional responsibilities—work with several consultants, each dealing with a separate subject.

Thanks to telephone and data transmission lines, there are additional strategies and techniques to deliver instruction. For example, two-way television makes it possible for students in this isolated rural setting to join classes taking place elsewhere. The on-site teacher provides day-to-day supervision and manages contact with the instructor at a distant site. Students have the opportunity to interact directly with the outside instructor as well as with classmates from other different sites, all of which are in voice and visual communication with one another.

This scenario is admittedly idealized. Although it holds open the possibility of dramatically enhanced curricular offerings in small rural schools, its realization probably hinges on the ability of the teachers and the quality and nature of their training. It is no small undertaking to become an academic generalist, to understand how learning takes place in a variety of fields, to stay informed about the resource base, and to become an effective manager of instruction in the hypothetical school described above.

If educators concerned with small rural schools are interested in realizing this vision (and there is ample evidence that they are), then substantial changes must occur in how teachers in small rural schools are trained. As a result, the academic qualities expected of both educators and their students might be expected to rise. The combined effect of changes in teacher training, technologies, and classroom instruction could well cause the number of teachers employed in small rural schools to fall, at least as compared to present norms.

Conclusions

It seems clear that the greatest promise attends combinations of technologies in nontraditional forms of instruction. And yet, there are a disquieting number of unanswered questions. For example, it is largely unknown how successful the new conception of a generalist teacher might be. It is also unclear how possible it will be to develop instructional programs that can substitute to some degree for on-site teacher subject matter expertise.

Although the seriousness of these questions highlights the dangers of viewing technology as an easy and readily available means of solving small rural schools' curriculum problems (Cuban, 1986), the potential is self-evident, and the direction for future research and development efforts seems clear.

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Clearinghouse on Handicapped and Gifted Children
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1986
DIGEST #439

SELECTING SOFTWARE FOR SPECIAL EDUCATION INSTRUCTION

Microcomputers are found in special education classrooms in steadily increasing numbers. How they are used depends in large part on the software selected for instruction. The amount of instructional software used on a typical school microcomputer is limited to three to four packages per machine (Blaschke, 1985). Teachers and administrators must decide which of the many products available are best for the special education students they serve.

Educators make two basic kinds of decisions when selecting software. The first is a program decision: "How will computers be used in the instructional process?" The second is a product decision: "Is this product consistent with curricular goals?"

Program Decisions/Instructional Options

Courseware is the term generally used for microcomputer software that supports direct instruction. Depending on the design and content, courseware can reinforce previously learned skills, present new subject matter, or require the use of problem-solving skills. To answer the question, how will computers be used to support the instructional process, it is necessary to consider the various options for computer-assisted instruction (CAI). CAI courseware is typically classified in four categories: drill and practice, tutorial, games, and simulation (Bialo, 1985). Each format can be used effectively with special education students.

Courseware that reinforces previously learned skills or concepts is called drill and practice. It is the most common format, accounting for over half of all software used in schools. With drill and practice programs, it is assumed that the content of the lesson has been previously taught. The purpose of the software is to provide practice and reinforcement. For many special education students, repetition and reinforcement is a crucial step in mastering skills and concepts. The computer is well suited to presenting the practice students need while maintaining the attention to task that is so important for many handicapped learners.

Two common features of drill and practice are branching and feedback. Programs branch to easier or more difficult tasks depending on the student's response to the problems presented. Feedback confirms correct responses and provides additional practice or explanation for incorrect responses.

Computer programs that teach new skills, concepts, or processes are called tutorials. Tutorial programs should be carefully reviewed to ensure that the content and presentation are appropriate for the learning style of the special education student. New instructional content needs to be presented in clear, logical, sequential steps. Examples and illustrations should be followed by opportunities for learners to apply and test their understanding of the content. A good tutorial package will include suggestions for follow-up or drill and practice activities away from the computer.

Some drill and practice and tutorial programs have a built-in instructional management feature that keeps track of student responses throughout the lesson. This feature provides valuable information for teachers who plan and monitor the student's individualized educational program.

Educational games and simulations are two kinds of problem-solving courseware. They may be used to introduce new skills or reinforce previously learned skills. Games use a contest format where the learner competes with the program or with other students. Learners apply accepted rules and principles to reach a goal. Simulations place students in real life situations where they can test alternative solutions to a problem. Computer-based simulations are often used to present situations that are too difficult or dangerous to recreate and experience in real life. As students progress through the program they are called on to make choices and deal with consequences.

Problem-solving programs require learners to use a variety of skills and facts to complete the exercise. Feedback is usually informational. As the user creates and analyzes variations of the problem, information is provided that helps them to make better choices in subsequent trials. Problem-solving software is usually designed for use by two or more students working together. This feature can have academic and social benefits for handicapped students. Grouping students with complementary skills or strengths can enhance/promote learning by creating a peer-tutoring situation.

In each of these CAI formats, the content of instruction is defined by the program. Another option for computer-based learning is to use the computer as a tool. Word processing and database programs are examples of the computer used as a tool. Unlike courseware, the content is unspecified. Instead the tool program provides a structure for organizing and manipulating information and the content of instruction is determined by the learner. For example, a word processing program may have features that permit the student with expressive language deficits to organize and complete a writing assignment independently.

Product Decisions

Once the purpose of computer-based learning has been determined, specific programs can be reviewed and selected. To answer the question, is this product consistent with curricular goals, it is necessary to determine how decisions about specific products will be made. Taber (1983) suggests that this process be conducted in two parts: external and internal. External processes involve collecting information about products and their effectiveness from outside sources. Perhaps the most useful information at this stage in decision making comes from other educators. Courseware reviews in computing journals and regularly published compendiums offer up-to-date opinions of new products. There are several resource groups that develop and disseminate product reviews specifically for special education. Information from these external sources helps to narrow down the choices.

Internal processes are those conducted in a school or district and usually involve a thorough examination of the individual courseware packages. The purpose is to determine how well a product matches instructional goals. Criteria, whether formal or informal, are necessary at this stage in the process. Reviewing guidelines developed by others is a good way to determine what questions to ask. Existing guidelines range from one-page checklists developed by teachers to validated evaluation forms developed by a product evaluation center like the Educational Products Information Exchange (EPIE).

Attention to both instructional and technical features of software are common to most evaluation processes. Decisions about computer-based learning for handicapped children should take into account the academic, physical, and computer-use demands placed on the learner. These demands may be weighted differently for different students. The academic demands of a program such as reading or vocabulary level may be crucial in selecting software for students with learning disabilities, while physical demands such as keyboarding may be the deciding factor with physically handicapped students.

Instructional features generally include characteristics such as curriculum match, learner objectives, soundness, accuracy and clarity of content, factual and grammatical correctness, academic and physical appropriateness for target learners, and support or supplemental activities. The goal in assessing these features is to determine how well a product meets the instructional needs of students. When evaluating drill and practice, tutorial, or problem-solving courseware, content features are of primary concern.

Technical features are generally those that relate to the computer as medium of instruction. The physical and computer-use demands placed on the learner are of primary concern. Programs should be easy to use, reliable, and free of programming errors. The presentation of information should be well placed and the instructions clear. Feedback should be informational rather than judgmental. Other characteristics to consider are technical quality, user control, and the use of the computer's graphics and audio capabilities.

The goal in assessing technical features is to determine how well the program uses the capabilities of the computer to present instruction. For most instructional courseware, satisfaction with technical features is secondary to content considerations. However, with tool programs like word processors, technical features usually take precedence.

Selecting software for special education instruction is a complex but important task. The software selection process should consider both program and product decisions.

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- The Educational Software Selector (TESS '85) EPIE Institute, P.O. Box 839, Water Mill, NY 11976
- Classroom Computer Learning Directory of New Educational Computer Software, Classroom Computer Learning, 5615 West Cermak Road, Cicero, IL 60650
- The SpecialWare Directory, ORYX Press, 2214 North Central Avenue, Phoenix, AZ 85004

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ERIC DIGEST

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Enhancing Learning in At-Risk Students: Applications of Video Technology

Cognition and Technology Group *
Learning Technology Center, Peabody College of Vanderbilt University

Most educators today agree that we have a serious problem with respect to learners who are at risk of school failure. The purpose of this digest is to explore some possible uses of video technology that have been shown to be effective for enhancing learning in at-risk students.

Learning and At-Risk Students

It is extremely difficult to define who is at risk and who is not because being at risk is not related to a single cause, but rather to what Mann (1986) refers to as a "nesting of antecedent problems." However, most agree that at-risk learners are generally low achievers.

One reason for at-risk students' difficulty with learning is that much of current instruction for these students is remedial and is focused on transferring information in the form of facts and procedures. Unfortunately, information presented as facts is then stored as facts, and for most students it is not recognized as knowledge to be used to solve problems. The consequence is that the facts remain inert and often are not spontaneously used in problem solving situations (Bransford, Sherwood, Hasselbring, Kinzer, & Williams, in press; Whitehead, 1929). Indeed, findings from the National Assessment of Educational Progress (Dossey, Mullis, Lindquist, & Chambers, 1988) indicate that American students have significant difficulties in reasoning and in putting what they have learned in school to use in solving problems. It appears that our present system of formal education is doing a rather poor job of attaining this goal, especially with students who are at risk for school failure.

Shared Learning Environments and the Role of Video Technology

The concept of contextualized learning environments arises out of the recognition that students, particularly at-risk students, who are introduced to concepts and strategies out of a meaningful context will view them as irrelevant to daily life. Much of the work at Vanderbilt University's Learning Technology Center over the past five years has examined the use of shared contextualized learning environments and the effect of these environments on learning.

It appears that children often learn well when they and a mediator share a context or event that can be mutually explored (Feuerstein, Rand, Hoffman, & Miller, 1980). For example, Sherwood, Kinzer, Bransford, and Franks (1987) note that mediators, such as parents, siblings, peers, and other adults, can arrange the environment so that learners will encounter certain experiences. They can also help learners separate relevant from irrelevant information and connect present experiences with previous knowledge. Finally, mediators monitor the performance of learners to encourage as much independent performance as possible.

In the classroom, teachers play the role of mediator and try to help students relate new information to previously acquired knowledge. The teachers, however, often do not know which experiences are relevant for a particular child. This is a situation in which technology such as videotape and random access videodisc becomes especially valuable. With these tools teachers can create contexts that teachers and children can share. Video technology may not substitute for hands-on activities in various real world contexts; however, in some situations video is even superior to a field trip to the grocery store or zoo because the video can be replayed and reviewed as often as necessary.

Bransford et al., (in press) note three advantages to the use of video-based contexts. First, they provide rich sources of information with opportunities to notice sensory images, dynamic features, relevant issues, and inherent problems. Second, they give students the ability to perceive dynamic moving events and to more easily form rich mental models. This advantage is particularly important for lower achieving students and for students with low knowledge in the domain of interest. Third, video allows students to develop skills of pattern recognition which are related to visual and auditory cues rather than to events labeled by the teacher. In sum, video images are ideal for creating a common experience for the teacher and learner that can be used for "anchoring" new knowledge.

Video Applications for At-Risk Students

Several anchored instruction projects have been conducted at the Learning Technology Center and have shown definite advantages for learning in students considered to be at risk of school failure. Following are short descriptions of two of these projects.

Anchored Instruction in the Preschool. Johnson's 1987 study of preschoolers who were considered at risk was designed to ask whether story comprehension could be improved if students had the opportunity to experience the story within a rich, video-based context. He divided the at-risk students into two groups. He read the beginning of a simplified version of *Swiss Family Robinson* to one group and showed the other group a videodisc of the same part of the story.

Johnson found that both groups learned from the story; however, the videodisc group learned far more. In the text-only condition, students had to use their imagination to understand such things as the force that a storm must generate to smash a huge sailing ship upon rocks. Most of the students in Johnson's study, however, did not have the background experience or knowledge to imagine this. They had no experience with storms on the ocean, huge waves, or large sailing ships. The teacher could only describe what it must have been like for the Robinson family. By contrast, the video group could experience the storm vicariously through the video. The teacher was able to anchor new knowledge and understanding of storms, waves, and sailing ships by revisiting the video.

The Young Sherlock Project. A second anchored instruction project was designed using the movie *The Young Sherlock Holmes* as the anchor for learning. This project was conducted in fifth grade classes and designed to help students learn language arts and social studies content. The experimental group, comprised of both at-risk and average ability students, received instruction within the context of *The Young Sherlock Holmes*. The matched comparison group received the same information without the benefit of the video anchor.

The study showed that the students in the anchored group were much more likely to use new targeted vocabulary spontaneously than students in the comparison group. Furthermore, the results of the studies on writing showed that the stories written by the anchored instruction group contained many story elements and their plots were more likely to link character actions and events to goal statements and goal resolution (Risko et al., 1989). Finally, students in the anchored group were much more likely to use historical information to make inferences about the motives of characters in other turn-of-the-century stories they read and videos they saw (Kinzer & Risko, 1988).

The data from these projects, and others that are being conducted across the country, offer an opportunity to merge recent knowledge about cognition, instruction, and culture with video technology to develop instructional systems that can make significant changes in the way the teaching and learning process for at-risk students is thought about and carried out in the schools. It must be emphasized, however, that it is the merging of information from these disciplines with technology that can make a difference, not the technology itself.

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TECHNOLOGY FOR THE GIFTED AND TALENTED

In general, computers are used in the education of gifted children in three ways: in computer assisted instruction (CAI), in developing thinking skills, and as tools for facilitating independent learning.

Computer Assisted Instruction (CAI)

The role of computer assisted instruction in the education of gifted children is to develop decision-making skills and to foster independent learning. In CAI, the computer presents information, asks questions, and verifies responses in much the same way a teacher does. Unlike traditional means of instruction, however, CAI allows students to work at their own level and pace. This mode of instruction can be very beneficial to gifted students who often have interests and abilities that go beyond the scope of the regular curriculum.

Drill and Practice. Drill and practice programs provide students with practice using material they have already encountered. Because these programs cover various levels of many subject areas, they can be used for both remediation and acceleration. Gifted children do not necessarily excel in all areas; they may need help mastering some subjects. Drill and practice programs help to reinforce recently acquired knowledge and skills. For gifted students, the primary role of drill and practice programs is to help students who want to go beyond the lockstep curriculum acquire new skills.

Tutorials. Tutorials are used to teach new information. Typically, a program presents a body of information and then questions the student on that information. Like drill and practice programs, tutorials can be a form of enrichment for gifted students who want to explore areas of content that may not be in the regular curriculum. Tutorials are also a means of accelerating content. If, for example, a gifted student can and wants to learn Algebra I in a shorter period of time than his or her classmates, tutorials provide a means for doing so.

Games. There are two categories of games that may be appropriate for gifted children: adventure games and mind-teasers. Adventure games put the player in situations in which he or she has to use problem-solving skills and creative strategies to overcome obstacles. The player must provide explicit directions to the computer. Adventure games can also help students develop prediction skills. Students learn very quickly to evaluate all possible outcomes before making a move. Mind-teasers are often the computerized version of conventional games such as chess, backgammon, or *Master Mind.*

Computer games are an excellent source of motivation, but they seldom have high content value. Since most students willingly spend hours on an educational game, their use must be monitored by a teacher.

Simulations. Simulations are among the most powerful learning tools for gifted children. They are based on the discovery approach to learning, that is, learning by doing. Simulations provide situations that are analogous to real situations, but they control limiting factors that exist in the real situation such as danger, expense, time, and space. Since simulations can be repeated, students can see the effects of using different strategies in solving the problems presented by the program.

How Are Computers Used to Develop Thinking Skills?

One of the major goals of programs for the gifted is to help students develop higher level cognitive skills, problem-solving skills, and creativity. Through the use of programs designed for these purposes, and by learning to write programs, students can develop modes and strategies of thinking that will affect the way they think in situations that are not related to the computer.

Gifted children are believed to be particularly adept at learning to use the cognitive skills of analysis, synthesis, and evaluation. Analysis refers to the ability to break a skill or conceptual structure into its components. Synthesis is the building of complex skills or conceptual structures from simple parts. Evaluation calls for the comparison of skills and structures and the making of judgments about them (Bell, 1981). Some games and simulations are aimed at helping students develop these skills.

Creativity involves another kind of thinking—divergent thinking. As is the case with the development of cognitive skills and problem-solving skills, students can explore their creative potential by using software that is designed specifically for that purpose or by creating their own unique and interesting programs. Some programs encourage students to write poetry, compose music, or draw pictures. Other programs show students how to develop strategies for creative writing.

Teaching children to write computer programs also helps to develop thinking skills. Students are taught that a computer is very similar to the human mind. The steps that a computer goes through in running a program are similar to the steps a person goes through in solving a problem of logic. When students learn to see the analogies between the computer and the brain, they begin to see how they can apply computer logic to other kinds of problem solving.

In programming, there are two kinds of problems to be solved. The first centers on the steps involved in writing a program. Students learn to break a problem into its components and to tell the machine how to deal with each of the components. The second kind of problem involves "debugging" the program, that is, solving the problems that are related to the logic and sequencing used in creating the program. Both kinds of problem solving require the use of thinking skills associated with analysis, synthesis, and evaluation.

How Does the Computer Serve As a Tool for Gifted Students?

Processing Data. One of the goals of educational programs for gifted children is to foster independent learning. To achieve this goal, students are encouraged to conduct their own research. An example of such a program is found at the Talcott Mountain Center in Connecticut. At this center, gifted students conduct experiments on wind speed and direction by tracking helium-filled weather balloons. Students use the computer to analyze the data from their experiments (Barstow, 1979).

Word Processing. Word processing has changed the way composition is taught. Before the age of the microchip, writing and rewriting were often troublesome, especially for students who have poor handwriting or those who demand perfection in their work. Word processing packages greatly facilitate students' efforts to make editorial changes, thereby reducing their reluctance to rewrite compositions.

Creating Art and Music. Students can create works of art on the computer in several ways. Some software packages allow students to use either the keyboard or a joystick as a paintbrush. Not only colors, but textures and brush strokes can be controlled. In addition to programs, students can use graphics tablets to create designs. Students place light pens at various points on a tablet, and the corresponding design appears on the screen.

Music can also be created on the computer. Some programs let users enter notes and specify their parameters (octave, duration, dynamic level, articulation); compositions can be written for up to four independent voices.

Electronic keyboards make writing music easy for students who play the piano. Like graphics tables, keyboards are peripherals that can be interfaced with a microcomputer. As a user plays the keyboard, the notes and parameters are temporarily stored in memory. The piece can then be saved on a disc for later use or further alteration.

Authoring Systems. Authoring systems and languages allow users to create computer programs even if they know very little about conventional program languages. Typically, authoring programs allow the user to create drill and practice or tutorial programs. Authoring systems can also be used by gifted students who want to create interactive software without going through the usual stages of programming. As is the case with many tutorials, software created with authoring systems presents a narrative, asks a question, waits for a response, and provides a reinforcing statement. Many authoring packages include features such as graphics, branching, and score keeping.

Networking. In its most simple form, a network is like a grapevine: one person shares information with a second person, who passes it on to a third. The age of technology has greatly expanded human capabilities for sharing information.

Because gifted children often have interests that lie beyond the scope of traditional school curricula and resources, they can benefit tremendously from networking. In some instances gifted children form their own networks; in other cases, they can hook into networks established by other individuals, organizations, or businesses.

The real power in networking lies in the capability of microcomputers to communicate with other computers. To do this, a microcomputer is attached to a modem, which is an electronic device that converts the computer's binary code to auditory signals that can be sent through telecommunications systems to other computers. By using telecommunications, students can contact large data banks, information services, or electronic bulletin boards. Electronic bulletin boards function essentially in the same way as traditional corkboards. A user can post a message asking for information or send a message to other members of the network. Networking helps put students and teachers in contact with resources outside their immediate environment.

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1986
DIGEST

INTERACTIVE VIDEO FOR SPECIAL EDUCATION

The term *interactive video* is generally applied when a microcomputer is used in combination with a videodisc player. The resulting medium blends all the capabilities of the microcomputer with the vast information storage of the videodisc.

What Is a Videodisc?

A videodisc is a medium for storing large amounts of information. The disc resembles a 12" phonograph record but stores both sound and visual information for playback on a television monitor. The basic videodisc system consists of the disc itself and a disc player which is interfaced with a standard television set. The pages of a book, motion sequences complete with sound, still pictures such as slides and photographs, and graphic animations can be stored on a single disc.

Best suited to interactive video is the laser disc which has a silvery, grooveless surface that covers and protects the information stored on the disc. The videodisc player directs a laser through the surface onto the inner layer where information is stored in encoded form by pits or reflective areas. Laser discs are resistant to nicks and scratches and immune to wear because nothing touches the encoded surface.

A laser disc can store 54,000 still frames of video per side, which is about 30 minutes of uninterrupted full-motion video. Laser discs also offer the option of dual audio tracks. The tracks can be played simultaneously for stereo sound, or separately to allow for a bilingual soundtrack or narration suitable for different age groups or learning levels.

Optical encoded discs have a tremendous storage capacity that can accommodate a range of video formats. They are extremely durable and offer the first truly interactive video capability that can be used in a wide variety of applications.

What does the Term *Interactive* Mean?

The term *interactive video* implies that the learner is actively engaged in the lesson and often controls the course of an instructional sequence through responses to the information presented. All forms of interactivity in this format are based on branching. Branching occurs through the use of two basic conventions: a multiple choice or a free response. In either case, branching to another part of the disc occurs when an option is selected by the learner.

The degree of interactivity depends on the capability of the videodisc delivery system or hardware. A videodisc player interfaced with a television monitor has certain interactive capabilities. When the player and the monitor are used with a microcomputer, interactive capabilities increase significantly. Videodisc systems are divided into three categories, according to the level of interactivity they provide.

Level I discs are designed for an inexpensive consumer player. Simple control functions, such as stop, rewind, and fast forward, are operated manually from a keypad. The disc itself has no programming. The user can simply play the videodisc or manually branch to other locations on the disc. The rate of presentation can be varied. A Level I disc may be encoded to stop in a single frame where the user may be quizzed, given additional instructions, or offered another option. It is also possible to create simple feedback loops using the built-in features of the player. With these techniques the user may exercise a limited amount of control of a lesson.

A Level II disc is designed for use on a videodisc player with a built-in microprocessor. In this case, there is programming on the disc. The microprocessor in the player reads these programs and automatically branches to different segments based on the student's responses to multiple choice questions. Although Level II discs are described as interactive, their response analysis capability is limited by the memory available in the player.

Level III discs are designed for use on a videodisc player that is interfaced with a microcomputer. Unlike Levels I and II, in Level III all programming is controlled by the external microcomputer. Often called intelligent videodisc, this level has greatly enhanced options for structuring a lesson, posing questions, and responding to learner input. At Level III the features of computer-based instruction are combined with high quality video to deliver the full power of interactive video.

What Are The Advantages of Videodisc Technology?

The combination of excellent video quality, rapid access, and computer control makes it easy to simulate realistic experiences on videodisc. Response time is fast enough to give the learner a feeling that a conversation is taking place. Good pacing is important because it holds the interest of the user, and an interactive system requires that the user be actively involved in the instructional process.

Although an interactive videodisc is rather expensive to develop, the cost of duplication is relatively low. Consumer costs for both hardware and software are gradually coming down as the use of this new technology grows. In general, the availability of programs is also on the increase. However, the quantity of videodisc courseware for use in the schools is still limited, as is the quantity of hardware found in the schools.

What Are Some Applications of Videodisc?

Interactive video is being used to simulate experiences that are potentially dangerous in real life, such as crossing a busy street in a wheelchair, flying and landing an airplane, or doing a security check through dark hallways. One of the first successful discs was developed by the American Heart Association and was used for CPR (cardio-pulmonary resuscitation) training. Their studies show that learning time was cut by two-thirds and retention rate doubled.

How Have Videodiscs Been Used for Special Education Instruction?

One of the first interactive videodisc projects in the field of education was the Media Development Project of the Hearing Impaired at the University of Nebraska. The discs included instruction in social studies, language development, and finger spelling. A Level III disc series called "Thinking It Through" taught interactive thinking skills. Students could explore decision-making processes and the consequences of different responses to a problem or situation.

The California School for the Deaf at Riverside developed an interactive videodisc for teaching language and reading skills to hearing impaired students. The purpose of the program was to increase exposure to motivating language and reading experiences. An authoring system component provided ten interactive formats. Students were branched through the instructional sequences on grammar, syntax, categorization, capitalization, spelling, and punctuation.

At Utah State University, three projects were conducted under the auspices of the Interactive Videodisc for Special Education Technology (IVSET) program. Hardware and software components were developed to produce CAI (computer-aided instruction) materials for mentally handicapped students, a bilingual assessment instrument for mathematics skills, and an instructional program to teach social skills to behaviorally handicapped students.

A current investigation at the University of Pennsylvania involves a new method for teaching young children to read and write. The study incorporates the use of microcomputer and videodisc players to initiate communication at the very onset of instruction. Deaf and multiply handicapped children are included in the program. Preliminary results demonstrate a significant improvement in word and phrase identification, reading comprehension, and basic sentence construction.

At the University of Iowa, an interactive videodisc system is being used to train teachers and clinicians in classroom observation skills. The program provides complete training in the use of the Classroom Behavior Record (CBR) with children referred for psychiatric services. The training side of the disc contains motion samples of classroom behavior and glossary information. The practice side provides extended motion samples of classrooms and can be used for practice and reliability testing.

These examples of the successful use of interactive videodisc technology in special education suggest that the potential is well understood and that special educators will continue to explore the effective use of this technology. For more information about the projects highlighted in this digest, contact:

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ERIC MINI-REVIEW

RURAL EDUCATION

INTERACTIVE DISTANCE LEARNING TECHNOLOGIES FOR RURAL AND SMALL SCHOOLS: A RESOURCE GUIDE

What is "distance learning?"

As administrators in rural and small schools strive to deliver quality education to their students, the obstacles of teacher availability, low student enrollments, and geographical isolation beg for solutions. In the past, our approaches to solving these problems have included pairing agreements, traveling teachers, correspondence study courses, or school district consolidation. Some of these practices still have value; however, new—and in some cases better—approaches are now available through technology.

Today's technologies have given rise to increased interest in the concept of "distance learning." With limited fanfare, many schools across the United States have been using distance learning technologies to help them meet new state mandated curriculum requirements, to offer elective or long standing required courses for which a certified teacher is not available, and to provide quality teacher inservice training which otherwise might not be available. Distance learning technologies, as used in this Review, refer to the live, simultaneous transmission of a master teacher's lessons from a host classroom or studio to multiple receiving site classrooms in distant locations. Two-way live communication, whether audio or video, between the teacher and students makes the instruction interactive.

How can distance learning technologies benefit rural and small schools?

Schools with the most to gain from distance learning technologies are those with low student enrollments and/or those faced with teacher shortages. Distance learning technologies make it possible for these schools to offer a full and varied curriculum, as well as quality teacher inservice training, without the need to consolidate schools and without physically transporting teachers from one location to another.

The purpose of this Review is to (1) provide a brief description of some of the more popular distance learning technologies currently being used and (2) present a list of successful programs/projects interested readers can contact for further information.

What specific technologies are used for distance learning?

Several approaches are available. The most common seem to be some form of audio teleconferencing linked with microcomputers, or interactive television which integrates satellite, fiber optics, microwave, cable, slow scan TV, or ITFS (Instructional Television Fixed Service) technologies.

Satellite Transmissions

Four instructional television satellite systems are presently broadcasting instruction to high school students scattered throughout the continental United States. One-way, full-motion video is transmitted from an uplink studio to downlink or receiver dishes at subscribing schools. Audio talk-back by participants is over regular telephone lines, thereby making the system interactive.

The TI-IN Network operates out of Texas. At the close of the 1986-87 school year, TI-IN was beaming lessons for 23 different high school credit courses 5 days each week to over 200 subscribing high schools in 14 different states. In addition, the network beams extensive inservice training for teachers and enrichment programs for students across the K-12 curriculum.

Oklahoma State University's Arts and Sciences Teleconferencing Service began broadcasting a single semester of German language instruction in January 1985. Since then the network has grown significantly. During the 1986-87 school year, broadcasts were received by 101 districts in 6 states, and offerings had been expanded to 2 full years of German and a full year of high school physics. At the beginning of the 1987-88 school year, OSU commenced the offering of trigonometry and advanced placement calculus. Future course production plans include the broadcast of accredited high school courses in Russian language and chemistry. Unlike the TI-IN Network, OSU's satellite courses are broadcast either 2 or 3 days each week (depending on the course) rather than 5. On the nonbroadcast days, students work individually at their schools on computer assisted lessons and written assignments which have been specifically designed by OSU educators. Extensive inservice training and K-12 student enrichment programming is also provided by the network.

Beginning in the Fall of 1986, Eastern Washington University—in conjunction with Education Service District #101 in Spokane, Washington—began the broadcast of the Satellite Telecommunications Educational Programming Network (STEP). STEP began with the broadcast of 4 high school courses to 15 schools in Washington state. The operation of STEP most closely parallels the TI-IN Network, except that live instruction is beamed to subscribing high schools 4 days each week rather than 5. This gives school officials the time to handle more local concerns each Friday with those students who would normally be studying by satellite. At the beginning of the 1987-88 school year, the STEP Network had expanded beyond Washington to other states in the Northwest. In addition, the original four courses have now increased to seven. Inservice programs for teachers are also provided.

The SciStar Satellite series originates from the Talcott Mountain Science Center in Avon, Connecticut to nearly 100 sites in 25 states. SciStar has produced several school enrichment programs, chiefly in the sciences, for high school students. Numerous teacher inservice programs, discussing such topics as brain hemisphericity, chronobiology, gifted education, and creative teaching strategies, are also available. Student programming includes science news, reading proficiency, high school computer science, amateur radio, physical science, etc. Most student programs are presented in five, 50-minute broadcasts. By far the most popular SciStar program has been the "Shoulders of Giants" series. Ten sessions, each lasting an hour and a half, are presented during the school year. Each session features a world leader in science with whom students at downlink site locations can dialogue during the broadcast.

The application of satellite technology for interactive television instruction in public schools is still in its infancy. As existing networks grow and new networks begin beaming instruction, interest across the country—especially in small and geographically isolated school districts—is expected to mushroom.

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Two-Way Interactive Television

Many model two-way video and two-way audio interactive television systems are operative in small schools. Successful projects include systems in Illinois, Iowa, Wisconsin, New York, Minnesota, and other states. In most systems, each school on the network has a fully equipped television classroom which allows a teacher in one location and students at one or more locations to both see and hear each other during the instructional broadcast. Transmission may be over cable, fiber optics, or microwave. The typical model is a cooperative arrangement between five to eight districts to form a telecommunications network. The network co-ops human, financial, and equipment resources to provide interactive television programming over several channels between member schools. Programming usually includes elementary/secondary courses and inservice training for teachers. A variety of other courses may also be offered such as vocational instruction, library programs, community education classes, story hours, or general interest topics. Instructional television permitting two-way video and two-way audio interaction between cooperating school districts is one of the fastest growing—and most promising—distant learning alternatives available for small and geographically isolated rural schools. The fact that participating schools maintain local control of their programming is also an appealing aspect of this technology.

Instructional Television Fixed Service (ITFS)

ITFS systems are FCC licensed, low power, line-of-sight TV broadcast stations that transmit omnidirectional signals a maximum distance of about 40 miles. In most cases, ITFS stations are located in large metropolitan areas, benefiting large schools in urban and suburban settings. Small rural schools near or adjacent to the respective metro area may also benefit by receiving the signal. Most ITFS systems are one-way video with the possibility of two-way audio interaction. The audio interaction is typically over regular telephone lines.

ITFS has inherent advantages and disadvantages over other instructional television systems. Advantages are that four channels are usually licensed to one operator. Only one antenna is needed by receiver site schools to pick up signals for all four channels. Hence, the host site is able to broadcast on four different channels simultaneously, enabling distant schools to receive a variety of programs. Disadvantages center on the limited broadcast range due to the low power broadcast and on the expense of the technology.

ITFS systems operate in many of our large cities. Examples of two large systems are the InterAct system in Houston and the Regional Instructional Television Consortium (RITC) in Richardson, Texas. Both systems are characteristic of others like them across the country.

The Region IV Education Service Center in Houston operates the InterAct Instructional Television Network. Using closed circuit microwave technology, video and audio signals originate from the InterAct studios. From there, they are dispersed via omnidirectional microwave to subscribing receiver sites in the seven county Gulfcoast area. Receiver sites are equipped with a tower, antenna, down converter and an audio talk-back converter. The receiver classrooms are equipped with modified television sets and talk-back instruments. Over 30 school districts subscribe to the network, including several small schools in the area. Program offerings include selected high school courses, K-12 student enrichment viewing, staff development, and college credit courses.

The Regional Instructional Television Consortium (RITC) is a cooperative effort of almost 50 public and private schools. The purpose is to provide high quality instructional television to schools and communities in North Texas. Broadcast recipients are chiefly large schools located in the Dallas-Fort Worth metroplex, yet numerous small schools in outlying areas are also members. RITC broadcasts 8 hours of instructional programming each school day across the K-12 curriculum. The evening hours are devoted to college courses and continuing education. Most RITC programs are one-way video and one-way audio only.

Audio-Graphic Teleconferencing

Microcomputer networks and electronic mail systems are commonplace in many schools. Yet, a relatively new approach to microcomputer networking is to integrate PC's with live, telephone interaction. Microcomputers are linked via modems over regular telephone lines coupled with an audio bridge over a separate set of phone lines.

Audio-graphic teleconferencing is a PC-based system that incorporates a graphics tablet which functions much like an electronic chalkboard. The system requires specially designed software. Once on-line with other compatible PC's, the system operates on a "common screen" basis—that is, whatever graphic or print material is executed from any one screen (location) shows up on all the other screens (locations) at the same time. The technology is capable of operating in either a "present" mode or an "interact" mode. The teacher (or students) can prepare pages prior to "class" and store them on disk. During instruction, disk content can be distributed electronically to each user simultaneously. Audio-graphic teleconferencing also permits real time interactive writing and/or annotation on blank or existing screens. Along with graphics/print interaction, an audio bridge permits immediate voice interaction between all users.

Successful audio-graphic distance learning programs have been piloted in Utah, Pennsylvania, and New York. One disadvantage of this approach is that the teacher cannot see the students, nor can students see the teacher. Oral communication over the audio bridge and visual communication in the form of computer graphics or print must be well designed in order to maximize instruction. Proponents of audio-graphic teleconferencing claim that this feature gives this approach to distance learning its most positive aspect—the necessity for teacher/student interaction. In order for audio-graphic teleconferencing to work well, students must be actively involved in the learning process. They must be more than recipients of instruction. They must also be participants.

What monetary costs are associated with distance learning technologies?

School administrators interested in investigating interactive distance learning technologies for adoption in their schools should consider two cost factors: (1) initial equipment costs and (2) annual subscription or programming fees.

Required equipment for each of the satellite systems includes a downlink or satellite receiving dish, a TV monitor, and assorted telecommunications devices. Initial equipment costs vary among vendors, with ranges between $4,500 to $15,000. In addition, schools joining the Oklahoma State University network will need to acquire—unless they already have them—one microcomputer for every two students enrolling in coursework. The microcomputers must be compatible with software produced by the respective network. OSU's software is Apple, IBM, and Radio Shack compatible. Interested readers should contact the individual networks directly for information on current prices and for help in identifying precise equipment needs. Annual subscription fees also vary. Typically, fees for high school programming are separate from fees for teacher inservice training and other special programming. Depending on the extent of programming desired, annual subscription fees may be as low as $300 or as high as $10,000.

Costs for two-way video/two-way audio instructional television systems are very expensive. Among the cooperatives which have been organized, total equipment investment has ranged anywhere from $400,000 to 2 million dollars. Costs are shared among cooperative members. In most cases, they have been offset with sizeable federal, state, or private grants. Partnership arrangements between schools, cable companies, and rural telephone companies have also resulted in a significant reduction of direct equipment costs to some schools.

Initial equipment costs for an ITFS broadcast site can range from $100,000 on up. Schools at each receiver site location will need to purchase an antenna, down converter, and possibly repeaters if they are a long distance from the station. Equipment costs for receiver sites can range anywhere from $1,000 to $4,000—more if a repeater is added.

Costs for audio-graphic teleconferencing include equipment charges as well as long-distance phone service for the audio bridge. Hardware, speaker phones, and associated communications software can be expected to run between $6,000 to $13,000 per site. Schools which already have the necessary hardware equipment (typically a PC microcomputer with a minimum of 612K memory) can purchase required software for anywhere between $700 to $4,000 per site. Long distance phone charges will vary between geographical regions but are likely to range between $.15 per minute (for WATS line) to $.45 per minute for prime time commercial use.

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Could distance learning technologies be utilized while students are traveling long distances on a school bus?

As part of its Area Vocational Program, Pikes Peak Community College in Colorado Springs, Colorado has initiated a Distant/Mobile Learning Project which involves the use of a multi-media equipped school bus for the transportation of students. While the students are in transit, they can participate in learning rather than wasting time. The 18 passenger bus is equipped with a 13 inch TV monitor, a VHS video cassette recorder, head phones, an OMNI multidirectional antenna, power inverter, laptop microcomputers, and a mobile telephone. Instructional content can be delivered in the form of (1) "canned" (commercially prepared) video programs; (2) delayed video—programs taped one day then viewed the next, coupled with instructor interaction the following day in school; (3) live ITFS video transmission from Colorado Springs to the bus, with student audio interaction via a mobile telephone located on the bus; or (4) laptop microcomputers used by the students for note taking, homework, or telecommunications while in transit.

Are state sponsored educational telecommunications networks in operation or in the process of being developed?

Due to its immense geographical expanse and scattered population, the state of Alaska several years ago developed the LearnAlaska network as a statewide system of audio-conferencing and satellite instructional television for classroom use, inservice training, staff development, college credit coursework, and educational outreach. Plummeting oil prices in 1986 resulted in severe budget cuts to the LearnAlaska system, dramatically limiting its outreach capability. The audio-conferencing component is still in place, but the instructional television system has been significantly cut back. In spite of its reduced level of operation, the LearnAlaska system is still an excellent model for interested educational leaders in other states to consider in developing a statewide telecommunications system.

The rapid growth of the satellite instructional television networks, discussed earlier in this Review, has spawned great interest by many state school officials in the feasibility of such statewide networks. In particular, the 1986 Kentucky Legislature, with strong endorsement from the Governor's office, approved plans for a multi-million dollar statewide network that will include an uplink and 1,650 downlink dishes. A receiver dish will be located at each of the state's 1,320 elementary and secondary schools, as well as at state sponsored vocational schools, libraries, community colleges, and universities. The primary thrust for educational programming will be to elementary and secondary schools. Programming during evening hours will include staff development, college credit instruction, adult education, continuing education, and community education. Programming will originate from Lexington. Educational leaders in Kentucky anticipate that the network will be operational by the Spring of 1989.

In 1987, the Board of Directors of the Missouri State School Boards Association (MSSBA) approved establishment of the Educational Satellite Network. At the time of this writing, 200 downlink dishes have been installed in public secondary and elementary districts across the state. By the end of 1989, the MSSBA plans to have installed downlinks at most of the state's 545 elementary/secondary districts. The network will operate on a non-profit basis and will broadcast a full range of programming, including high school courses, student enrichment, staff development, and college credit classes. Uplinking will be from a KU-band mobile unit, thereby allowing programming to originate from virtually any desired location within the state. The base price for districts to participate on the network is about $3,500.

School officials in many other states are expressing keen interest in the possiblity of a statewide network for their respective state. It is expected that others will follow the examples set by Alaska, Kentucky, and Missouri.

How do interested administrators bring their schools "on-line" to distance learning technologies?

The best approach is to contact others who have experienced success. Addresses of the programs mentioned in this Review are listed at the conclusion.

Interested school officials should carefully assess their needs and resources—specifically student curriculum and inservice training requirements and budget capability. Once a decision on a system is made, support should be sought from other school leaders, the community and key groups before investing in expensive technologies. It would be wise to contact the state office of education and seek advice from state education leaders. Some states have restrictions on telecommunicated instruction, especially when it originates from out-of-state. It is also important to remember the diverse nature of rural America and of rural and small schools. No one distance learning model or practice necessarily "fits all sizes." Modification of existing practices or models may be needed in order to determine the best approach to meet local needs.

Another consideration is the matter of maintenance and warranty. Anyone who drives a car knows that technology occasionally breaks down. The more technology that is hooked together to form a system, the greater the possibility that things can go wrong. Who is going to fix things when they break? Maintenance agreements and equipment warranties are important considerations when setting up a system or subscribing to a program producer.

Will the attention presently given distance learning technologies continue in our schools?

There seems to be a great deal of interest in applying distance learning technologies to rural and small schools. This is not to suggest that the use of distance learning technologies is an educational panacea. Most educators would agree that quality instruction by a certified teacher in the classroom is still the ideal way to educate students. Yet in remote and isolated schools where a certified teacher is not always available or in small schools where limited student enrollments make hiring teachers for low incident courses cost prohibitive, instruction via distance learning technologies may be the "next best thing to being there." Although it is highly unlikely that distance learning technologies will be a rationale for replacing teachers—nor should they be—we can anticipate that this approach to instructional delivery will not only remain with us for many years but will likely continue to increase in terms of use and acceptance.

For more information

Information about the programs and information presented in this Review was obtained by the author over an 8 month period via personal correspondence and telephone contact with each of the programs discussed. It should be understood that the specific programs mentioned in this Review are not inclusive. Still other exciting applications of technology are occuring in small and rural schools around the country. Interested readers are encouraged to contact the programs listed below for updated and more detailed information. In addition, the September/October 1986 issue of *Teleconference: The Business Communication Magazine*, Volume 5, Number 5 provided an address listing of 57 different telecommunications vendors in the United States. The same list is reprinted as part of an ERIC microfiche document entitled "Using Interactive Technologies to Increase Course Offerings in Small and Rural High Schools," ERIC Document ED 279 465.

Satellite Transmissions

The TI-IN Network
100 East Nasa Road, Suite 201
Webster, Texas 77598
(713) 554-5545

Arts and Sciences Teleconferencing Service
Arts and Sciences Extension
206 Life Sciences East
Oklahoma State University
Stillwater, Oklahoma 74078-0276
(405) 624-5647

Satellite Telecommunications Educational Programming
Education Service District #101
West 1025 Indiana
Spokane, Washington 99025
(509) 456-7660

SciStar Satellite Series
Talcott Mountain Science Center
for Student Involvement, Inc.
Avon, Connecticut 06001
(203) 677-8571

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Two-Way Interactive Television

Tele-Systems Associates, Inc.
11995 Singletree Lane, Suite 230
Minneapolis, Minnesota 55344
(612) 829-5861

Knowledge Interactive Distribution System
St. Peter High School
Lincoln Drive, Room 120
St. Peter, Minnesota 56082
(507) 931-4210

East Central Minnesota Educational Cable Cooperative
Westview High School
Braham, Minnesota 55006
(612) 396-3674

Carrol Instructional Television Consortium
200 South School Street
Lanark, Illinois 61046
(815) 493-6301

Trempealeau County Kellog Project
205 Offeo Road
P.O. Box 326
Independence, Wisconsin 54747
(715) 985-3004

Communicasting Project
Woodland Cooperative Center
N.E. 5th Street
Staples, Minnesota 56479
(218) 894-2438

Morning Sun Community School District
P.O. Box 129
Morning Sun, Iowa 52640
(319) 868-7702

Instructional Television Fixed Service (ITFS)

Regional Instructional Television
8221 Towns Street
Dallas, Texas 75243
(214) 235-7770

InterAct Instructional Television Network
Region IV Education Service Center
P.O. Box 863
Houston, Texas 77001
(713) 462-7708

Audio-Graphic Teleconferencing

Tele-Learning Network
Garfield County School District
Box 398
Panquitch, Utah 84759
(801) 676-8821

Tele-Teaching Project
Mansfield University
Mansfield, Pennsylvania 16933
(717) 662-4578

Wasatch Blackboard System
P.O. Box 626
Salt Lake City, Utah 84110
(801) 575-8043

Interactive Tele-Learning Network
Delaware-Chenango B.O.C.E.S.
RD 3, East River Road
Norwich, New York 13815
(607) 336-6514

Optel Communications Inc.
322 8th Avenue
New York, New York 10001
(212) 741-9000

Statewide Telecommunication Systems

LearnAlaska
Instructional Center
Alaska Department of Education
Box F
Juneau, Alaska 99811-0500
(907) 465-2884

Satellite Project
Kentucky Educational Television
600 Cooper Drive
Lexington, Kentucky 40402
(606) 233-3000

Educational Satellite Network
Missouri School Boards Association
1809 Vandiver Drive, Suite 100
Columbia, Missouri 65202-1983
(314) 474-8591

Interactive Video on a School Bus

Distant/Mobile Learning Project
Area Vocational Program
Pikes Peak Community College
5675 S. Academy Blvd.
Colorado Springs, Colorado 80906
(303) 576-7711, Ext. 404

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A MINIBIBLIOGRAPHY ON COMPUTERS: SPECIAL EDUCATION MANAGEMENT

ED 265 678. Microcomputer Analysis of Children's Language Samples. Sharon E. Rosenkoetter and Mabel L. Rice. 1985, 39pp. Microfiche $.97, Paper copy $5.34. Three software packages for language analysis are examined: Lingquest 1, PANEL, and SALT. Advantages, limitations, and possible applications of each program are explored.

ED 250 461. Career Planning System. Microcomputer Version. Evaluation Report. James P. Long and Delia Neuman. 1983, 67pp. Microfiche $.97, Paper copy $7.14. An 18-month project was conducted to create a microcomputer version of the National Center for Research in Vocational Education's Career Planning System (CPS) designed for use with mildly mentally retarded, learning disabled, and behaviorally handicapped middle school students.

ED 246 595. Evaluating and Providing Feedback on the Effectiveness of Instruction for Handicapped Children Integrated in Inner-City Secondary Schools. Final Report. 1983, 443pp. Microfiche $.97, Paper copy $34.97. The final report presents a quarter-by-quarter analysis of results in a project designed to develop and implement a microcomputer-based management system for resource room teachers of mainstreamed mildly handicapped secondary students.

ED 240 123. Project SPECIAL: System Evaluation Report. Randy Elliot Bennett. 1983, 177pp. Microfiche $.97, Paper copy $16.56. The system was intended to meet the needs of administrators to maintain accurate information about special education regulations and provide timely accurate status reporting as required by state and federal legislation with minimal use of local district staff time. The majority of the document consists of the appendices, which contain a district system user's guide, as well as a county/state system user's guide for Project SPECIAL.

ED 236 900. Managerial Applications of the Microcomputer for Special Education Teachers. For Your Information. Denise Griffith-Sheriff and Virginia Walter. 1981, 7pp. Microfiche $.97, Paper copy $3.54. An overview of the uses of microcomputers in special education management is provided. Suggestions for selecting and evaluating software focus on documentation, cost, input, output, flexibility, training, and hardware.

ED 234 534. Data Based Program Modification: A Disk for Monitoring Student Progress. Caren Wesson. 1983, 18pp. Microfiche $.97, Paper copy $3.54. The paper describes a microcomputer disk, Data Based Program Modification (DBPM), which allows special and regular educators to monitor the progress of each student, thereby perceiving the effectiveness of the instructional program.

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Documents with ED numbers are available on microfiche in any library that has an ERIC microfiche collection. They may be purchased (paper or microfiche copies) from the ERIC Document Reproduction Service, 3900 Wheeler Ave., Alexandria, VA 22304. (EDRS prices quoted include first-class postage or UPS charges.) Enclose check or money order payable to EDRS or enclose authorized original purchase order. Virginia residents add 4% sales tax. For further information call EDRS 1-800-227-3742.

EJ 308 669. The Development of a Computerized Diagnostic Report/Lesson Plan Program for the Articulatory Impaired. Stephen E. Blache. 1983. *Collegiate Microcomputer, 1*(3), 251–255. Discusses evolution and construction of a computer program for use by speech pathologists which permits inexperienced computer operators to generate extensive diagnostic reports and in-depth therapy programs for students with speech defects.

Reliability and Validity of a Microcomputer Assessment System for Developmentally Disabled Persons. James M. Gardner and Anne Breuer. 1985. *Education and Training of the Mentally Retarded, 20*(3), 209–213. The development of a microcomputer assessment system is described with respect to establishing its reliability, validity, utility, and cost-effectiveness. Using the system, nonprofessionals, in less than an hour, generated an in-depth, inexpensive, and comprehensive individualized 5–10 page behavior assessment which was judged superior in quality by administrators, client advocates, and direct care staff.

Montevideo Individualized Prescriptive Instructional Management System. Joanne Peterson and others. 1985. *Exceptional Children, 52*(3), 239–243. A computer-based measurement system for monitoring student progress through an individualized math and reading curriculum is described along with results of a study to determine whether special education and Chapter I students could be identified in reference to the number of units of instruction completed by the end of a school year.

Data-Based Program Modification: A Continuous Evaluation System with Computer Software to Facilitate Implementation. Lynn S. Fuchs and others. 1983. *Journal of Special Education Technology, 6*(2), 50–57. This paper describes a continuous evaluation system, data-based program modification (DBPM), which has demonstrated technical adequacy, logistical feasibility, and instructional effectiveness.

A Model for Evaluating Special Education Programs: An Application to Determining the Management and Instructional Benefits of Microcomputers. Robert K. Gable. 1982. *Journal of Special Education Technology, 5*(2), 35–43. A model for evaluating special education programs is presented and applied to a microcomputer management and instruction program. The five stages of the model are: developing the evaluation model, collecting the evaluation information, analyzing the data, writing and presenting the report, and applying the evaluation findings.

Computer-Administered Bilingual Language Assessment and Intervention. Mary S. Wilson and Bernard J. Fox. 1982. *Exceptional Children, 49*(2), 145–149. The paper describes how microcomputer courseware can be developed to provide interactive receptive language testing and training materials for the bilingual language handicapped child.

Use of Microcomputer to Manage Assessment Data. Booney Vance and David Hayden. 1982. *Journal of Learning Disabilities, 15*(8), 496–498. Examples are provided of a computerized special education management system used to manage assessment data for exceptional students. The system is designed to provide a simple yet efficient method of tracking data from educational and psychological evaluations (specifically the Wechsler Intelligence Scale for Children—Revised scores). Step by step directions are given for adding, updating or printing records, and possible additional options are described.

How To Order Journal Articles

Copies of journal articles are available from University Microfilms International (UMI). The price is $12.00 for each article if accompanied with an EJ number and must be prepaid by cash or by credit card (either MasterCard or VISA). Call UMI for price information on articles that do not have EJ numbers. Be sure to include EJ number, author, title of article, name of journal, volume, issue number, and date for each article required. Order from UMI Article Clearinghouse, 300 North Zeeb Road, Ann Arbor, MI 48106, (800) 732-0616.

Toward the Advancement of Microcomputer Technology in Special Education. Ted S. Hasselbring, Ed. 1984. Seven author-contributed papers comprise the special issue on unresolved issues and future applications of microcomputers including a review of existing expert systems, specifically those designed to assess and diagnose student learning problems. "Using the Microcomputer for Assisting in Teacher Decision-Making," by T. Hasselbring and J. Gray examines ways in which microcomputer technology can enhance three types of decisions: preactive, interactive, and postactive.

Available from Peabody College of Vanderbilt University, Box 41, Nashville, TN 37203 ($5.00).

Resources from The Council for Exceptional Children

Handbook of Microcomputers in Special Education. Michael M. Behrmann, Editor. No. 294. 1984. 218pp. ISBN 0-933013-35-X. $25.00. This text links the best practices in teacher training with the ways microcomputers can be used with exceptional children in the classroom, focusing on how computer use is similar to current methods of special education instruction and to the learning characteristics of gifted and handicapped children.

Proceedings of the National Conference on the Use of Microcomputers in Special Education, Hartford, CT, March 10–12, 1983. Michael M. Behrmann and Liz Lahm, Editors. No. 275. 1984. 217pp. ISBN 0-86586-149-8. $20.00. Presentations are grouped thematically in five major sections. Section II on Management includes computer assisted management and computer managed instruction.

Available from The Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091-1589.

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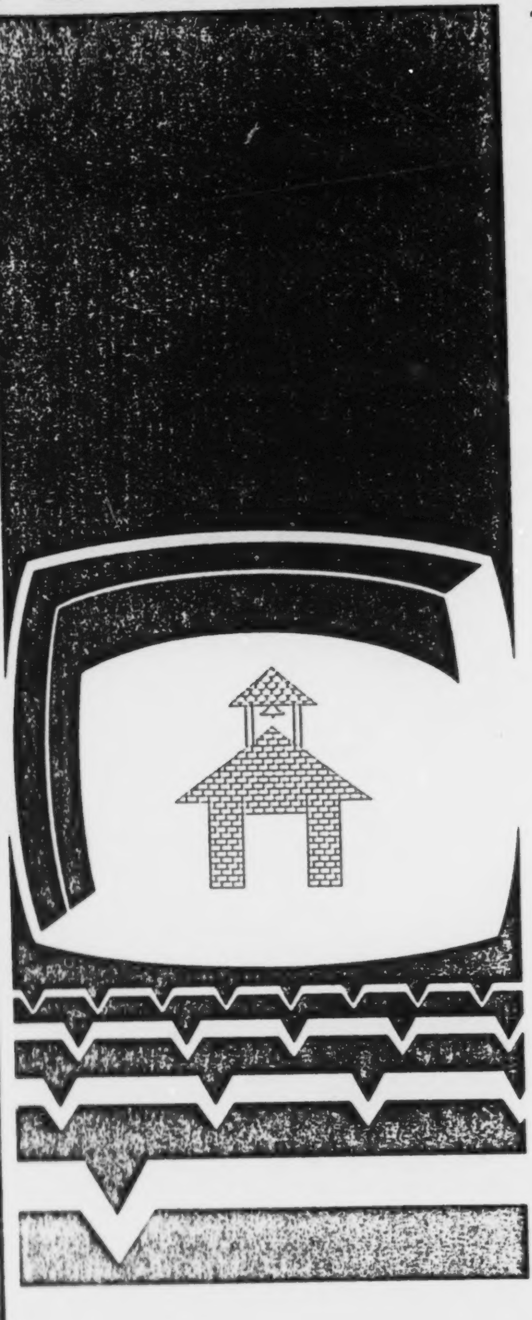
The Mid-Missouri Small School Computer Consortium



Training Teachers On Their Own Turf

ERIC

MICROCOMPUTERS IN RURAL SCHOOLS--PROBLEMS OR SOLUTIONS

The problem is not one of coaxing rural schools into the computer age; it's how to make use of the computers they've already bought. Whether donated by the bank, bought from PTA fund drive earnings, or purchased with "special ed" monies, most rural schools have one or more TRS-80, Commodore, TI, IBM, or Apple computers. Having computers, however, doesn't necessarily bring a school into the computer age. Even in those districts blessed with an innovative administrator, incorporating computers into the curriculum often falls short of potential.

Because of a steady decline in price, the easiest step toward entering the computer age is purchasing a computer. To some extent computers have become an educational fad--parents have got the message and are anxious to have their children "learn computers." To some extent computers have become a status symbol. While computers in schools are here to stay, we are generally still at the stage where the quantity of hardware, rather than the utility of it, conveys "progress."

As schools progress beyond the "acquisition of hardware" stage, rural schools may find more applications for computing capabilities than their larger city counterparts. Computers have the capability of "extending" the instructional capacities of overloaded teachers and/or "extending" the curriculum offerings of schools whose size and budget do not allow for much instructional specialization. The National Commission on Excellence in Education in its report entitled "A Nation At Risk" (1983) calls for us to equip graduates "to understand the world of computers, electronics, and related technologies." How can rural schools successfully implement the technology of the "computer era" as they pursue this goal?

Computers are products of a unique technology--they are not quite like anything experienced before. Other electronic technologies like television, radio, etc. typically have only one application. In contrast, computers are being used for hundreds of very different applications, and the number of applications can only increase. Computers can serve administrative or instructional purposes; teachers can teach about computers or teach with them; computers are applicable to first grade writing or to calculus; students can "teach" (program) computers or be taught by them. The many ways in which computers will be used in education are still evolving although there are literally thousands of "educational" software packages now available. But how "educational" some of this software is and how the software, the classroom, and the teacher will interact is still very much in the experimental stage.

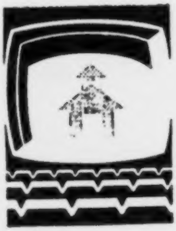
The Computer and the Rural School

We have implied that smaller, rural schools may be in a better position to take the lead in educational uses of microcomputer technology than their large school counterparts. Because the small school often does not have the economic means to provide as many and as varied curriculum opportunities for its students as the larger school, the small school must either be content to offer its students a narrow selection of courses or seek alternatives to the traditional teacher/classroom course in order to expand the curriculum. Microcomputer technology offers one viable curriculum alternative. A microcomputer and a telephone can combine to bring to the smallest community the information, references, and educational resources of a well-stocked library. Microcomputer technology offers the promise and potential that access to pertinent educational materials need no longer be denied because of remote location. Computer technology is a bridge to resources. It won't guarantee learning but it can contribute to an economical solution to one of the traditional problems of small schools--insufficient numbers of teachers and inadequate educational resources.

Computer applications for small schools are still evolving. Although there are many pertinent software applications, small school administrators and teachers generally have their hands full with existing work loads and don't have the time to acquire the technical competence necessary to pick out the "best" systems and apply them to the educational needs of the school. Further, small schools may have need for applications of computer technology different than those of large schools (large schools with 500 employees may find a payroll program a valuable addition, but a district with 20 employees may find it more trouble than it is worth). There is nothing inherently beneficial in performing a task by computer--it depends on the size of the task and the alternatives for performing it.

Learning from the Literature

The application of microcomputers in education has become widespread and varied, extending beyond the bailiwick of urban schools. Indeed, Fletcher (1980) argues that the smallness of rural schools makes them a uniquely promising setting for developing electronic technologies, and further states that specialized programs offered through electronic technology could be ultimately more cost-effective than either consolidation or specialist staffing.



Through microcomputer use in the Educational Telecommunications for Alaska Project (1981), remote students use individual programming to learn native languages, legends, and traditions, as well as conventional subjects. Electronic mail service available through the Administrative Communication Network (ACN) helps to bridge the gaps between many remote and isolated districts. The Alaska Knowledge Base System (AKBS) provides teachers and administrators with rapid access to information banks on a variety of instructional materials, research documents, and curricular development resources.

Both Pennsylvania and Arkansas have established electronic information networks which provide public schools with valuable and timely information on meetings, events, and pending education legislation. An electronic mail service has been set up in Kansas so that school districts across the state can deliver messages, discuss issues, and share ideas. National information services such as Newsline and ED-NET now serve many districts. The Alabama Association of School Boards uses an electronic mail service to send daily legislative information to members (Lloyd, 1983).

Hofmeister (1984) notes that many rural education problems are related to communication and may be overcome by electronic communication technologies. Electronic mail systems, electronic bulletin boards, computer conferencing, wire services, and database searches are several videotex applications which schools can use to their advantage. Hofmeister believes, however, that the notion of achieving universal excellence in instructional delivery through computer-assisted instruction has faded somewhat.

Educational Operations Concepts, Inc., in its Guide on Successful Uses of Technology in Rural Schools (McCormick and McCormick, 1982), concludes that the use of various electronic technologies can overcome some of the financial, personnel, and curricular limitations of the rural school district. Among the kinds of electronic technology being effectively and efficiently used in rural school systems are computers, instructional television, videodisks, audio tapes, radio, telecommunications systems, programmed instruction, video tapes, and interactive video. The guide further states that organized and interested teachers and staff who are provided with specific technological pre-service and in-service training are essential to the effective utilization of technology in the classroom.

Conboy (1983), in reporting on the Charlton Country Education Pilot Project in Australia, describes the two-way audio contact initiated among seven rural secondary schools and other outside resource agencies. Achieved by way of an experimental terminal and teleconferencing system, the goals of the project were to increase the level of interaction among small rural school teachers, administrators, and outside information sources and to use communications technology in an educational setting. Difficulties encountered in this audio system, as Conboy reports, were the design of the remote terminals, the variable quality of the transmission reception, the inappropriateness of the instructional medium for some subjects, such as art, and the lack of opportunity for student participation in discussions. Teleconferenced lectures were found to be more effective.

The Educational Resources Information Center (ERIC) database contains approximately 130 items on rural technology that cover a variety of subjects related to rural education including new technologies, new uses of technology, and case studies. Technology applications described in ERIC materials include in-service training, international rural development, employment training, health education, career education, special education, gifted education, and adult education. Technical reports in ERIC cover communication satellites, mass media, educational television and radio, mobile classrooms, computer-assisted instruction, and computer-assisted testing.

Using computers for drill and instruction in the classroom has become relatively common. However, the instructional use of computers in rural or isolated schools sometimes lags behind that of their urban and suburban counterparts. Zakariya (1984) further points out that affluent schools get more computers than schools located in low socioeconomic areas and the ratio of students to computers is lower in more affluent districts. Poorer schools are more likely to use their computers for remedial instruction and for drill and practice in basic skills; little time may be allowed for enrichment activities via computer.

The development and/or implementation of technology specific to the needs of rural schools and the concomitant costs to those schools is an issue of vital concern. Three papers were commissioned for the National Institute of Education's 1980 "Workshop on

Telecommunications in the Service of Rural Education" (1980). Fletcher (1980) suggested using rural and small schools as developmental sites for rural education technology to ensure that this technology does meet the needs of rural school systems. Bransford (1980) noted that while rural education is often a focal point for government aid, projects seldom survive beyond their initial development funding largely because (1) money is usually provided for capital (hardware) expenditures and seldom for the software that makes the technology useful; (2) institutional and personal problems arise; (3) the need for individual programming develops in the face of economies of scale; and (4) institutional fears of telecommunications technology surface. Filep (1980) reviewed newer communications developments in his paper and described some rural education applications of technology. Workshop participants were offered several suggestions and outlined a practical strategy for implementing technology in rural education systems. Participants at the workshop defined the most immediate need as getting available information into the field as soon as possible, especially information on applications and potential funding resources.

With respect to the funding of technological innovations in the rural or small school setting, Monk (1982) feels that existing cost indices are flawed in a way that discriminates unfairly against rural/small school districts. He proposes that states use a service-specific cost index which takes into account the service cost differentials as well as input cost differentials, thus providing a more equitable means of compensating for differences in the costs of providing educational services.

Filep (1980) notes that a variety of communications technology is both affordable and essential to the rural school district, especially if a sharing of technological costs and benefits between different groups in the rural community can be achieved. Filep provides a number of recommendations on planning, needs assessment, organizational aid, and potential funding sources.

The two case studies cited next have particular relevance to the project undertaken by the Mid-Missouri Small School Consortium.

In a rural school case study in Kansas (McDonald and Gibson, 1982), three microcomputers were initially purchased with no comprehensive plan for acquisition, training, or maintenance. Major problems encountered were the misuse of equipment by uninformed users and the hoarding of equipment by informed users. The school later provided in-service training to reduce the seriousness of the problems.

Kelly and Vanvactor's (1983) analysis of data from Project SPECTRE (Special Education Curriculum and Training for Regular Educators), a federal in-service training program for teachers in rural Nevada, cites several methods for training remotely located teachers including instruction by independent study, by school district "master teachers," and by university instructors on campus or on site. On-site instruction by university personnel or by master teachers appeared to be both academically and fiscally more effective than instruction on the university campus or through independent study.

Several other sources cast the efforts of the MMSSC in an interesting and innovative light: Rottier, et al., (1983) found in a survey of 348 teachers in several small Minnesota school districts that significant numbers of teachers appeared to be personally dissatisfied with teaching. While certainly not an isolated finding, the impact of widespread dissatisfaction--especially among male and experienced teachers--may lead small school administrators to embrace technological advances in education as a way of reinvigorating frustrated teachers.

Brown and Jackson (1983) offer the U.S. Cooperative Extension Service as a model for cooperative activity between state universities and surrounding local education institutions, thereby linking the rural or small community to the larger resources of the university.

Sher (1983) states matter-of-factly that small schools face higher per pupil costs unless resources are shared with other schools.

As these experiences show, the use of computer technology in the educational arena is not new, nor is the concept of in-service training. Both, however, when applied to a consortium of rural school districts--such as the Mid-Missouri Small School Consortium--and with university and state department of education assistance, offer a new horizon to districts with limited resources and plagued by problems of restricted curricular range, financial contraints, and inadequate specialist staffing.

MARYLAND STATE DEPARTMENT OF EDUCATION
Division of Special Education

REPORT

MARYLAND COMPUTERS FOR THE HANDICAPPED
THREE YEAR LONGITUDINAL STUDY
1987-1990

January 1991

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BACKGROUND

English and writing teachers have long advocated frequent structured writing as a means to improve writing skills for students. The introduction of computers into the classroom and their rapid proliferation (Becker, 1986) have given teachers a tool that may be of valuable assistance to students, even those having difficulty in school. This influx of computers has been seen as an excellent opportunity for students with special needs to receive individualized instruction, feedback, and motivation (Semmel, 1985). However, how the computers are integrated into the curriculum and utilized by students seems to be as important as the actual use of computers themselves. Vockell (1990) has pointed out the need to integrate computers and software into theoretical principles or specific instructional strategies rather than using computers in isolated learning centers or labs. Another concern raised by researchers (Williams, Thorkildsen, and Crossman; 1982) has been the lack of adequate experimental control and other influencing variables that preclude the possibility of obtaining valid consistent results. This present study compared the effects of integrated structured instructional strategies for writing and the use of the computer as a word processor with handicapped students.

A fundamental objective here and a crucial concern expressed by administrators, supervisors and teachers was "Does writing instruction using word processing result in increased writing skill/ability when compared to writing instruction in which word processing is not employed?" On this issue researchers are divided. Some (Jackson, 1984; Hult, 1985) have identified no significant differences in composition or achievement as a result of using word processing, while others (Etchison, 1985; Kurth, 1986, 1987; Sommers, 1985; McAllister, 1985) reported differences in amount, quality, and number of revisions made while using a word processor. This study was conducted to investigate the question as it relates to handicapped students.

PROJECT

Beginning in 1986, administrators and teachers in several local education agencies in Maryland began asking for documentation on the effectiveness of word processing as a means of assisting handicapped students in their writing skills. Maryland has a writing competency requirement for graduation and the hope was that computers would provide these students with a usable tool. A three-year study was undertaken to determine the effects, reasonableness, and impact of computers in students' writing skills.

METHOD

Selection of Subjects

The study was conducted in seven school systems in Maryland. Total student populations in the school systems ranged between 3,420 and 24,332 with each system containing a mixture of students from different ethnic and SES backgrounds. The handicapped student population in these school systems ranged from 485 to 3,057. There were 42 teachers participating from 27 middle and senior high schools and a total of 598 control and experimental students.

Students and teachers were randomly selected in their respective school systems to be in either the control or experimental groups. Since the request emanated from supervisors and school board members, priority was given to a method and design as realistic to school life as possible, maintaining that students and teachers were in a constant state of change and promotion from year to year.

Both groups of teachers that participated in the study had approximately the same amount of teaching experience (Table 1, questions 2 and 3), and both groups included male and female teachers. The student sample included 418 boys and 180 girls enrolled in grades 5 through 12.

Software

After a comprehensive search of available software that would be applicable for a variety of handicapping conditions, the Milliken Word Processor (Milliken Publishing Co., 1984) was chosen as the recommended software; however, one school system chose to use Word Perfect (WordPerfect Co., 1988). The Milliken was chosen because of its simplicity and use with a relatively small or limited hardware capacity.

Milliken includes the word processor and file cabinet diskettes and a writing workshop handbook for the teacher. Also available are the proofreader, mechanics, and spelling checker diskettes. The only problem identified by the teachers with the Milliken was a caution about disk speed alignment. Each experimental student had a personal disk to keep a copy of his/her work, and each classroom had at least one printer.

Experimental Design

The research design selected was a random experimental group-control group paradigm using expired Maryland Functional Writing Test prompts and holistic scoring. The study was a three-year research design aimed at evaluating classroom computer use in special education.

TABLE 1

TEACHER DEMOGRAPHICS

	'88 YEAR 1		'89 YEAR 2		'90 YEAR 3	
	CONT. N=16	EXP. N=26	CONT. N=7	EXP. N=10	CONT. N=3	EXP. N=10
. Grades Taught in the Past						
4-5 Grade (Elementary)	7	7	0	5	1	6
6-9 Grade (Middle)	20*	49*	16*	19*	6	21*
10-12 Grade (High School)	21*	23*	6	7	3	4
. Years Experience Teaching Special Education	8	8	10	10	7	7
. Years Experience Teaching Writing	8	7	5	8	6	5
. Most Recent Degree Attained						
BA/BS	9	13	4	4	2	6
MA/MS	5	13	3	6	1	4
Ph.D./Ed.D.	2	0	0	0	0	0
. Percent of Time Spent Teaching Writing						
0%-20%	4(27%)	1(4%)	1(14%)	3(30%)	0	1(10%)
21%-40%	3(20%)	5(19%)	4(57%)	3(30%)	2(67%)	4(40%)
41%-60%	4(27%)	12(46%)	2(29%)	2(20%)	1(33%)	3(30%)
61%-80%	2(13%)	7(27%)	0	1(10%)	0	2(20%)
81%-100%	2(13%)	1(4%)	0	1(10%)	0	0
.. Average Class Size						
1-5	4(25%)	4(15%)	4(57%)	4(40%)	0	1(10%)
6-10	9(56%)	11(43%)	2(29%)	5(50%)	3(100%)	3(30%)
11-15	2(13%)	5(19%)	1(14%)	1(10%)	0	6(60%)
16-20	1(6%)	6(23%)	0	0	0	0
. Usefulness of "Writing As A Process" Training						
Very	2(13%)	12(46%)	3(43%)	5(50%)	1(33%)	3(30%)
Useful	12(74%)	12(46%)	4(57%)	5(50%)	2(67%)	7(70%)
Not	2(13%)	2(8%)	0	0	0	0
'he following were asked of Experimental teachers only						
. a. Frequency with which you made equipment adjustments in the last 3 months						
1/Day		8(31%)		1(10%)		0
1/Week		5(19%)		1(10%)		1(10%)
1/Month		9(35%)		5(50%)		4(40%)
None		4(15%)		3(30%)		5(50%)

*Teachers may have taught more than one grade: N>16

	'88 YEAR 1		'89 YEAR 2		'90 YEAR 3	
	CONT. N=16	EXP. N=26	CONT. N=7	EXP. N=10	CONT. N=3	EXP. N=10
b. Frequency with which you required assistance from someone inside your building						
1/Day		1		1		1
1/Week		3		2		0
1/Month		10		6		6
None		12		11		3
c. Frequency with which you required assistance from someone outside your building						
1/Day		1		2		0
1/Week		0		0		0
1/Month		10		7		6
None		14		11		4
. Typical Child: Computer Ratio						
1:1		16		6		7
2:1		1		1		1
3:1		2		1		1
4:1		3		1		0
5:1		4		1		1
. Compared to the way you previously taught writing:						
a. how much planning time was required to apply the computers?						
Less Time		6		0		3
Same Time		14		8		5
More Time		6		2		2
b. how easily did your students acquire the concepts?						
Less Difficulty		14		4		7
Same Difficulty		9		4		3
More Difficulty		3		2		0
c. what was the level of enthusiasm expressed by your students regarding writing?						
Less Enthusiasm		0		0		0
Same Enthusiasm		2		2		1
More Enthusiasm		24		8		9

Teachers and their students were randomly assigned to either the control or experimental group. Training on the intervention curriculum 'Writing as a Process' was conducted at the beginning of each year for both groups of teachers.

A pre-post design was used each year to determine if a difference in writing samples existed as a result of the intervention. Each year, students were also asked to complete two post-intervention attitude scales, the first to determine their attitude toward school and writing semantic differential (SD) (Osgood, Suci, Tannenbaum; 1957); the second, toward other academic subjects, Estes (Estes, Richards; 1981).

A pre-post design was used each year to determine teachers' perceptions of their students' writing ability, using the teachers form of the SD. Additionally, the experimental teachers completed post-intervention questionnaires on the use and mechanics of the computers in their classroom.

Procedures

Students involved in this study were tested using the Maryland Functional Writing Test (MFWT) exactly as all students in Maryland are tested on writing. The MFWT is a holistically scored test that examines both narrative and explanatory domains through two independent writing samples. To accommodate differences among a wide range of dependent variables, demographic data was collected on both teachers and students.

The design was to: (1) take a baseline of writing samples, (2) use the 'Writing As A Process' curriculum as the intervention, and (3) take post intervention handwritten samples from all students; then an additional set of samples from the experimental students that would be computer generated. All samples were then independently scored by a third party group in North Carolina and returned to be analyzed. All teachers were asked to provide at least one hour of instruction per week for a minimum of ten weeks.

All teachers received initial training in the 'Writing as a Process' curriculum from the Maryland State Department of Education. Students were promoted in the traditional fashion; however, classroom instruction varied somewhat from teacher to teacher as to method, implementation, and reward; thereby, both the integrity of the study and minimum classroom disruption were maintained. The 'Writing as a Process' curriculum includes: diagnosing, prewriting, drafting, revising, and evaluating writing samples. The State had adopted two goals for instruction in writing: to use the writing process to communicate personal information and to use the writing process to respond to the demands and obligations of society.

RESULTS

Teacher Data

Demographic data on teachers was collected over the three-year period using frequency and percents for control and experimental groups. Table 1 describes results for both groups including the grades taught, experience in special education and writing, highest degree, percent of time spent teaching writing, average class size, and usefulness of the training for the three years of the study. This data was collected to assure comparability of teaching skills. Additionally, the experimental teachers were asked to respond to questions regarding the frequency of equipment adjustments, student:computer ratio, planning time differential, ease of students in acquiring concepts, and the level of student enthusiasm toward writing.

Table 1 (questions 1-4) shows that teachers in both groups were closely matched in grades previously taught, experience teaching, and degree attainment over the three years. The percent of time spent teaching (question 5) varied over the study with understandability larger concentrations in the first year, 41-60%; however, there was no difference between groups. Class size was primarily in the 6 to 10 range for both groups. Teachers found the writing curriculum training done each year to be useful.

The second set of questions asked annually of the experimental teachers was to determine the feasibility, reasonability, and effect of computers in their classrooms. A concern of administrators and teachers alike was the problem of repair and breakdown. The first question was to identify the frequency and severity of repairs. As time progressed, repairs became less frequent, and teachers were able to make repairs without assistance. The typical student:computer ratio was 1:1 in the classroom, even though some teachers used computer labs. An important element in using the computers were issues such as, how the software fit into the curriculum, keyboarding skills, planning time, etc., and how these factors would impact the students. Question 3a data shows that teacher planning did not require additional time for the computers as was originally thought, a trend that continued over the three years of the study. Compared with the way they had previously taught writing (question 3b), teachers believed their students had less difficulty acquiring writing skills when using the computers and at the same time (question 3c) were much more enthusiastic about writing.

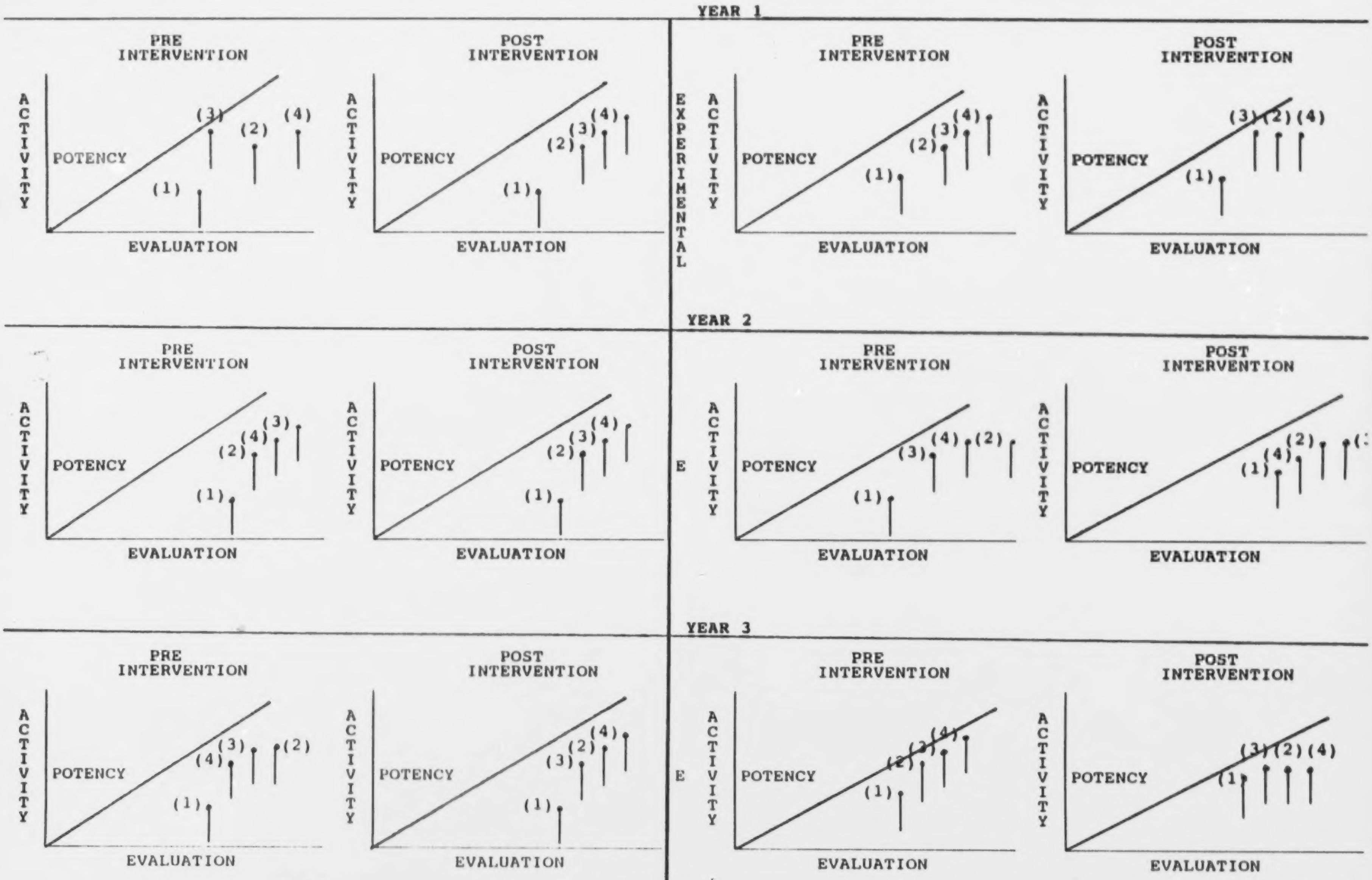
Results of the SD for both groups of teachers analyzed in Table 2 measured their perceptions of their students on the four concepts of: (1) writing ability, (2) teaching writing to special education students, (3) the use of microcomputers for classroom instruction, and (4) the use

TABLE 2

TEACHER PERCEPTIONS

Writing ability of my students
Teaching writing to special education students

3. Use of microcomputers for classroom instruction
4. Use of computers for instruction of writing



of computers for the instruction of writing. Data shows that experimental teachers consistently rated their students' writing ability higher after the intervention and were more positive about their students' ability in all four areas over the three-year period.

Student Data

Over the three-year period of the study, new students entered the classrooms, and original students continued or were promoted in typical school fashion. As a result, the study reflected the multiple variances of school routines. Table 3 presents summary statistical data on student demographics, writing results, and attitudes for all students over three years. Since other influencing variables have been mentioned before as an important omission in most computer research, a wide variety of student demographic variables were identified, monitored, and analyzed.

For the demographic variables, handicap, sex, and total hours spent in special education data indicates no significant difference (p>.05) between the two groups over three years. There was a significant difference (p<.05) in grade level the last two years with control students about one grade level above experimental students (year2 contr=8.0, exper=7.1;year3 contr=8.7, exper=6.9). Hours spent on writing in special education classrooms was significant (p<.05) for all three years (year1 contr=3.1, exper=3.7;year2 contr=5.3, exper=4.0;year3 contr=5.0, exper=3.5). Except for the first year, the control students spent more time writing than the experimental students. There was also a significant difference (p>.05) in the amount of time spent writing in their regular classrooms for the first two years (year1 contr=1.2, exper=.6;year2 contr=1.7, exper=.2). Control students spent more hours writing in regular education than their experimental counterpart.

Table 4 provides student-t data analysis for all three years following student entry. First year data indicates no significant pre-test difference (p>.05) between the groups for their handwritten samples, (contr mean score= 3.688, exper=3.831); however, there was a significant difference (p<.05) in post-test scores (contr=3.753, exper=4.100). When the additional experimental student computer generated post-test sample (M=3.805) was compared to the control students handwritten post-test sample (M=3.753), there was no significant difference (p>.05). First year post-test and computer scores for experimental students were significantly higher (p<.05) than their pre-test scores.

Second year results followed the original first year students, as well as new students for that year. In the second year, the experimental students' pre-test scores were significantly higher (p<.05) than the control students (contr=3.291, exper=4.094), post-test scores and

TABLE 3
SUMMARY TABLE

	YEAR 1			YEAR 2			YEAR 3		
STUDENTS N=598	MEAN	SD	SIG	MEAN	SD	SIG	MEAN	SD	SIG
GRADE	7.8	1.9	.44	7.5	1.6	.00	7.1	1.6	.00
HANDICAP	7.4	2.7	.29	7.8	2.5	.00	8.3	2.0	.19
SEX	1.2	.47	.97	1.2	.45	.12	1.2	.41	.92
HOURS IN SPECIAL EDUCATION	13.4	7.4	.25	14.6	6.1	.13	14.5	5.9	.49
HOURS IN SPECIAL EDUCATION WRITING	3.5	1.7	.01	4.5	4.5	.10	3.6	1.1	.00
HOURS IN REGULAR EDUCATION WRITING	.8	1.8	.01	.7	1.8	.00	.06	.4	.59
IQ	65	36	.42	82	16	.50	90	13	.00
PRETEST (C)	3.6	1.1	.40	3.1	.7	.00	3.0	1.0	.11
PRETEST (E)	3.8	1.1		3.6	1.0		3.4	1.0	
POSTEST (C)	3.7	.8	.01	3.2	.9	.05	3.6	.8	.76
POSTEST (E)	4.1	1.1		3.5	1.0		3.5	1.1	
COMPUTER (C)*	3.7	.8	.72	3.2	.9	.01	3.6	.8	.66
COMPUTER (E)	3.8	1.1		3.6	1.1		3.5	1.3	
ATTITUDE TOWARDS WRITING	21	12	.17	26	8	.02	27	7	.27
ATTITUDE TOWARDS SCHOOL	20	12	.11	25	8	.08	25	8	.86
ATTITUDE TOWARDS ENGLISH	46	29	.00	47	28	.01	47	31	.23
ATTITUDE TOWARDS MATH	40	28	.00	42	29	.02	40	28	.02
ATTITUDE TOWARDS READING	28	23	.15	28	24	.11	31	26	.17
ATTITUDE TOWARDS SCIENCE	44	31	.06	45	27	.25	53	29	.22
ATTITUDE TOWARDS SOCIAL STUDIES	32	24	.04	34	24	.62	35	24	.76

* uses postest scores for compairson

TABLE 4

T-TEST DATA ANALYSIS

	1st YEAR		2nd YEAR				3rd YEAR					
			ORIGINAL		NEW		ORIGINAL (1)		ORIGINAL (2)		NEW	
	CONTR	EXPER	CONTR	EXPER	CONTR	EXPER	CONTR	EXPER	CONTR	EXPER	CONTR	EXPER
PRETEST N=581	3.688 (69)	3.831 (154)	3.291 (12)	4.094 (53)	3.056 (44)	3.295 (83)	2.700 (5)	4.500 (7)	3.000 (4)	4.039 (38)	3.300 (5)	3.191 (107)
POSTEST N=584	3.753 (69)	4.100 (154)	3.583 (12)	3.811 (53)	3.195 (46)	3.407 (86)	3.100 (5)	4.714 (7)	4.250 (4)	4.135 (37)	3.700 (5)	3.292 (106)
COMPUTER N=500		3.805 (108)		3.888 (45)		3.573 (68)		4.916 (6)		4.194 (36)		3.700 (96)

computer scores were not significantly different (p>.05). New second year student scores were not significant (p>.05) for either the pre-test, post-test, or computer scores.

In the third year, the experimental students scored significantly higher on all three pre-test, post-test, and computer scores (p<.05) than did the control students. Students beginning in the second year and new students in the third year did not score significantly differently (p>.05).

Analysis of student attitudes after the intervention indicates that experimental and control students' attitudes toward school was not significantly different (p>.05) as measured by the SD for any of the three years; however, the experimental students' attitude toward writing was significantly higher (p<.05) than the control students for the second year.

Regarding student attitudes toward specific academic subjects, as measured by the Estes Scale, the data indicates no significant difference (p>.05) between groups in science for any of the three years. There was a significant difference (p<.05) in the students' attitude toward English, math, and social studies with experimental students having a higher mean score (year1 M=51, year2 M=50) than their control counterpart (year1 M=38, year2 M=33) in the first two years.

DISCUSSION

The data from this study present interesting findings regarding a variety of variables affecting the use of microcomputers with handicapped students.

In the three years of the study, both teachers and students using computers not only thought they were improving, but in fact, were improving over time. Table 4 indicates first year post-test scores and second year pre-test scores for experimental students dropped slightly over the summer 4.1 to 4.0, while control students dropped from 3.7 to 3.2. This trend difference continued over the three years indicating a greater retention for the students using computers. This hypothesis is also made more tenable by the fact that student performance was also somewhat higher even with new students entering the program. Table 4 also shows a continual rise in mean scores for the original experimental students over the three years in pre-test (3.83, 4.09, and 4.50) and computer scores (3.80, 3.88, and 4.91). Conversely, control pre-test scores (3.68, 3.29, and 2.70) and post-test scores (3.75, 3.58, and 3.10) continually declined.

In Table 3, whether or not the original students and teachers or new students and their teachers came into the program, experimental student attitudes were positive and significantly higher than control students' regarding writing, English, math, and social studies. Teachers of experimental students also continually alluded to the fact that their students wanted to come back to their classrooms to either do or complete assignments in other subject areas using the computers.

Since writing was integrated into the ongoing classroom curriculum and the writing samples were both handwritten and computer generated, the results seem to be more true as time continued. The decline over the same period is due in part to an initial Rosenthal effect and the sheer number of samples required of the students, especially the experimental students who were required to write two additional samples each year. Teachers were allowed to vary somewhat in their methodology; some had students compose on paper, then transfer to the computer, while others had their students compose at the keyboard. This did not seem to make a difference, except for the style with which the student was most comfortable.

Where computers did make a significant difference, according to the teachers, was in revisions and willingness to revise their work. In addition, in almost all instances, the teachers could read the students handwriting, but for the most part, the students could not read their own handwriting and the computers aided them in simply understanding what they wrote. Finally, and possibly most significant, the computer enhanced pride of authorship with these students most willing to read and share their work.

When the data from all the teachers' attitudes (SD) were aggregated, teachers of the experimental students thought the ability of their students increased and more closely resembled their perceptions of teaching writing to special education students, the use of microcomputers and the use of computers for instruction. Control teachers, on the other hand, did not think their students' writing ability increased, nor would the students' ability be affected by teaching writing or the use of computers to assist handicapped students.

These data suggest that integrating computers into the instructional curriculum can meaningfully, contribute to student learning without additional planning and work on the part of teachers.

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PROMISING PRACTICES & CASE STUDIES

Implementation of Promising Practices in Rural Settings: Necessary Conditions

Cheryl Chase Kane

Cheryl Chase Kane has worked extensively in school improvement efforts, identifying and implementing promising practices in rural settings. Through technical assistance and staff development activities, she has helped schools understand the change process to make promising practices work for them.

Promising practices are no more or less than what their name indicates—procedures that have worked in one place and are likely to work elsewhere. Although implementing such practices is a common strategy for school improvement, the process is often more complicated than it seems. Complications usually arise when an organization in one area tries to implement practices that have been effective in other locales. To make this transition successful, those importing the new practices often need outside assistance to help them integrate innovations into their routine operations. This is particularly true in rural areas where conditions may differ greatly from those in the place where the procedures were first successful. In addition, rural schools often enjoy far fewer staff members and less money to help them adjust to or adopt a new program.

Transferring practices, however, has great potential. If a promising practice is identified, all schools facing similar problems can benefit from adopting the program and the materials and processes involved without incurring the high costs of developing and refining a new program themselves. This is especially important for rural schools, which are usually small and often lack the financial and human resources to originate new programs.

The purpose of implementing new practices is to remedy a problem or, generally, to improve the quality of education being provided. Implementation itself comes after one has diagnosed problems or needs, decided to make improvements, examined alternative strategies, laid the groundwork and prepared individuals for the changes, and identified barriers to the change and ways of dealing with them. Once these steps have been completed and the practice has been introduced at the new site, those implementing the changes can provide appropriate training and assistance, modifying it to fit with the new circumstances until the practice eventually becomes integrated into the system.

In the abstract, implementation seems a simple process, described at length in the school improvement literature.[1] In practice, it is very complex and may fail if conditions in the adopting site are not conducive to implementing a new practice. The promising practice itself is simply a way of proceeding. However, it must be selected and used properly, and certain programmatic and environmental conditions must be met before the practice can realize its potential.

Potential adopters must be particularly careful to consider not only the programmatic circumstances in which an innovation is to be implemented, but also the broader environmental context of the implementing organization.

Too often, well-meaning educators carelessly implement promising new practices in schools without careful consideration of the prevailing conditions already impacting staff and students. The result is burnout and failure to realize the practice's potential because the conditions necessary for its success were not met. There are two significant reasons this can be especially damaging in rural schools. First, rural schools inherently have few human and fiscal resources available to devote to new procedures, so failure is particularly costly in terms of lost opportunity. Second, since one of the best predictors of success in implementing promising practices is past success at having done so, a failure can have long-term negative consequences for a district's ability to meet future problems through innovation.

The next section reviews the types of circumstances that are likely to help or hinder the implementation of promising practices in rural areas.

Background

To examine which conditions support improvement efforts, it is useful to compare findings from two Federal education programs. The first is the Department of Education's Secondary School Recognition Program, which identifies and recognizes exemplary schools throughout the country. Findings from a study of this program (1983-85) help answer the question: What is an effective rural school like? The second program is the (former) Office of Education's Rural Experimental Schools Program (1970s) which promoted comprehensive change in school districts. An analysis of this program informs the question: What conditions hinder rural areas in implementing promising practices?

A comparison of the findings of these two very different programs illustrates the conditions necessary to effectively implement promising practices in rural settings. Before comparing the two, the results of each program will be described separately.

The Secondary School Recognition Program

The Secondary School Recognition Program set out to "identify and recognize unusually successful public secondary schools and through publicity and other means encourage their emulation by other educators."[2] When Research for Better Schools (RBS) analyzed the data collected from the 571 schools recognized from 1983 to 1985, they discovered nine attributes that characterized all these effective schools. Despite the rich diversity of their programs, all exhibited:

- Clear goals and core values;
- Strong leaders;
- Good people and a good environment;
- Ability to solve problems and improve schools;
- Ability to work with the community;
- Control and discretion;
- Recognition and rewards for teaching;
- Positive student-teacher relationships; and
- High expectations and recognition of achievement.

These nine elements, discussed later in this paper, constitute a "portrait" of success. Schools with these elements were able to develop programs that were unusually successful in meeting students' needs. The nine characteristics do not specify what types of practices or programs should be implemented. Nor do they prescribe a particular strategy for improvement. They do suggest, however, that certain conditions enable schools to respond creatively to the almost endless combinations of needs presented by the communities they serve.

The schools identified through the Secondary School Recognition Program are located in extremely diverse communities. Approximately 25 percent of the schools are urban, 15 percent rural, and 60 percent suburban. Although rural schools were underrepresented in proportion to their overall number, "the chances of recognition once nominated were no less for rural schools"[3] than for ones in urban and suburban areas.

Schools also varied greatly in the wealth of the communities they served—measured in terms of numbers of students from low-income families. Approximately 25 percent of the schools recognized by the program served communities where less than 5 percent of the students came from low-income families, but slightly over 20 percent of the schools served communities where more than a fourth of the students came from low-income families. Although the sizes of the communities and their wealth varied, the attributes of effective schools remained constant. Issues concerning differences among rural, suburban, and urban schools—including differences between rich and poor schools—did not emerge. Characterized by the nine attributes identified and subsequently labeled by RBS as "the dynamics of success," these effective schools were more alike than different.

The Rural Experimental Schools Program

The Rural Experimental Schools Program, which developed in response to the perceived failure of efforts to improve rural education in the 1960s, supported comprehensive educational change in rural communities. Introducing a study of this program, Herriott and Gross reported that prior to this initiative, "nearly every systematic study of the fate of a specific educational innovation of public schools has concluded that its anticipated outcomes were not achieved, that its educational benefits were minimal, or that it was not fully implemented."[4]

The Rural Experimental Schools Program, which was targeted to school districts with fewer than 2,500 students, offered 5-year support for comprehensive education change in 10 geographically dispersed rural school districts. "Comprehensive" change required developing and importing promising practices across the board in the districts' educational programs. Through this program, the Federal Government hoped to stimulate long-lasting improvements in these districts and to study the process of change in rural environments. The story of the 10 rural school districts, which received funding amounting to 15 percent of their total budget, depicts the conditions that impede program implementation. Although many districts experienced "small success,"[5] Rosenblum and Louis concluded that "the program promised much more than it was eventually able to deliver."[6] They identified a number of barriers to improving rural schools. The findings (summarized in figure 1) are familiar to educators involved in improvement efforts. Nonetheless, it is important to keep them in mind when making decisions about future activities.

Implications

The contrast between the findings on the Secondary School Recognition Program and on the Rural Experimental Schools Program is striking. Although neither set indicates specific strategies to improve rural schools, they do suggest strongly the conditions under which improvement can take place.

Clear Goals and Core Values

The Secondary School Recognition Program, which does not involve Federal intervention but examines schools in their "natural" setting, found that effective schools are characterized by clear goals and core values—a sense of shared purpose with parents, teachers, students, and administrators all working toward the same ends. The primary goal was maximum student achievement—indicated by the teachers' frequent statements that all students can succeed. Effective schools act on their behalf, establish targets to help them work toward their goals, and monitor their performance. The whole school community values these goals and evaluates all new ideas or ways of behaving according to how well they will further the school's ultimate purpose.

Figure 1.—Attributes of effective schools contrasted with barriers to implementing improvements in rural schools

Attributes	Barriers
Clear goals and core values	Failure to develop consensus on goals; Failure to integrate improvement into the existing system; and Uncritical acceptance of innovations.
Leadership	Lack of leaders with requisite commitment and skills to support the effort to change.
Good people and a good environment	Lack of expertise in planned change; Absence of training programs; and Inability to identify and use consultants.
Ability to solve problems and improve schools	Failure to diagnose problems accurately; and Failure to anticipate and resolve problems with implementation.
Ability to work with the community	Lack of experience with collaborative structures; and Absence of community participation.
Control and discretion	Lack of monitoring and feedback mechanisms; Poor communication among teachers and administrators; and Lack of teacher participation.

Sources: Corcoran, T. and Wilson, B.L. *The Search for Successful Secondary Schools: The First Three Years of the Secondary School Recognition Program*. Philadelphia: Research for Better Schools. 1986.

Herriott, R.E. and Gross, N. *The Dynamics of Planned Educational Change: Case Studies and Analyses*. Berkeley: McCutchan Publishing Corporation. 1979.

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Districts in the Rural Experimental Schools Program, which did receive significant infusion of Federal resources in a program of "planned" change, on the other hand, were often unable to agree on their goals. Although this inability derived from various circumstances—ranging from unclear communications to disagreement among teachers, parents, and administrators—the effect was the same. In many cases, integrating new efforts into a system which had not defined itself was difficult. In such a situation, there was little or no basis for critically examining the available promising practices.

Leadership

The Secondary School Recognition Program found that while effective principals had diverse styles of leadership, all articulated their high expectations and communicated their visions of school excellence. Principals also created the conditions that enabled their schools to progress toward the vision. To do this, they enlisted community support, simplified procedures, cut paperwork, protected teachers from classroom interruptions, and provided opportunities for teachers and parents to participate in efforts to improve the school. In contrast, some districts in the Rural Experimental Schools Program failed, at least in part, because they lacked leaders with the necessary commitment and/or skills to initiate the proposed changes and to provide the environment in which the changes could be effected.

Good People and a Good Environment

Schools recognized as exemplary are characterized by high percentages of teachers with master's degrees, low turnover, and extensive opportunities for professional development through inservice training, conference attendance and participation in committee work. Administrators in these schools work with teachers to make realistic plans to help the school achieve its goal. In contrast, insufficient expertise in planned change, a lack of training programs for administrators and teachers to provide them with necessary skills, and inability to use consultants all impeded efforts to improve the rural schools. In districts that suffered from these deficiencies, administrators and teachers had an insufficient set of core skills to make the necessary changes.

Ability To Solve Problems and Improve Schools

Schools recognized as exemplary faced many of the same problems that most schools encounter, including inadequate facilities, declining enrollments, and poor financial support. However, exemplary schools did not use their problems as excuses for maintaining the status quo. In some cases, particularly with inadequate facilities, people did the best they could do with what they had, and shifted the focus from the walls surrounding the classroom to the interactions of the people in it. At such schools, staff members identified problems directly related to learning and school improvements. Moreover, they carefully made realistic plans to deal with them. In contrast, many of the individuals involved in the Rural Experimental Schools Program did not diagnose these problems accurately or take account of the complex context in which they existed. Nor, in many cases, did they consider the additional problems—such as role overload and the need for extra training—that would arise as staff members took on new roles and increased responsibilities.

Ability To Work with the Community

Exemplary schools described positive working relationships with the community. They solicited parental support and involvement in their children's academic development; requested resources (including volunteer aides, materials, expertise, and money) from the community; and created activities—such as concerts, community beautification days and adopt-a-grandparent programs—that gave students opportunities for public service. Districts in the Rural Experimental Schools Program, on the other hand, had little experience in working in collaboration with other groups and suffered from a lack of community participation. The finding that "community and staff participation in the early phases of the planning process turned out to be negatively related to successful implementation"[7] demonstrates the importance of developing a long-term culture of community involvement rather than treating it as a "one-time" event for a specific purpose. This finding also underscores the importance of ensuring that the individuals involved have or get planning skills necessary to carry out various elements of an implementation strategy.

Control and Discretion

Principals in effective schools understood how to use control and discretion to get the best results. They controlled by monitoring their schools and their progress toward objectives. They collected information from teachers and parents, analyzed test scores, evaluated curricula, and used teacher evaluations to improve performance. At the same time, these principals allowed teachers to use their own discretion and recognized teachers' expertise in areas affecting their life in the classroom. In contrast, barriers to improvement, noted in the Rural Experimental Schools Program, included an absence of monitoring and feedback to identify problems early, poor lines of communication among teachers and administrators, and a lack of teacher participation in decisions which affected them.

Conclusions and Recommendations

As figure 1 indicates, certain factors are characteristic of exemplary schools, whether rural, urban, or suburban in character. Conversely, when these factors are not present, their absence inevitably acts as a barrier to improvement efforts. Although these factors do not provide blueprints for action, they do suggest strongly that certain conditions must exist in rural settings to improve schools. Schools and/or districts must have certain basic capacities if they are to succeed in improving their programs.

Change is a complex process involving both the nature of the new idea as well as the context in which it will take effect. Transplanting promising practices, developed and validated in one site, to another site that is deficient in any of the areas described above, will significantly inhibit the "promise" of the practice introduced.

These studies, as well as the experience of those who have worked in school improvement, suggest four general approaches to improving rural schools. Each of these requires an initial assessment of the school or district's capacity to support positive change in the system. One approach is to identify sites that have sufficient levels of these capacities and bring in promising practices to *strengthen* the quality of education they offer.

A second approach is to focus initially on *local system improvements* rather than on the implementation of promising practices. As Rosenblum and Louis suggest, "if many local conditions are 'wrong'—that is they will act as barriers to change—it may be worthwhile to work on system adjustments to improve the organization's basic health before plunging into a full-scale process of planned program change."[8]

A third approach, which combines the two strategies described above, involves *training and assistance* to strengthen the organization's basic health while implementing the innovation. The primary focus, however, should be on building the capacity for improvement.

A final, less immediately visible, but potentially powerful approach is that of addressing larger, non-local system issues which may operate at community, county, State, or regional levels to constrain improvement efforts. This strategy involves diverse activities such as: making changes in the nature and delivery of services to rural schools; redefining State-level guidelines and requirements; improving the performance of organizations which prepare teachers and administrators; and stimulating cooperative community development efforts.

Regardless of the improvement approach selected, rural schools interested in implementing promising practices should:

- Clearly define the nature of the improvement—including anticipated outcomes, and the roles and responsibilities of service providers and local school personnel;
- Thoroughly assess the conditions that are likely to hinder the improvement effort and develop plans to cope with them;
- Identify and address problems rather than their symptoms and accurately define difficulties in sustaining the effectiveness of improvement efforts; and
- Select strategies that either directly or indirectly enlarge a local school's capacity to improve and leverage available resources for the improvements.

Most important, they must learn from the experiences of the past, not only those of the Rural Experimental Schools Program but also from hundreds of other such efforts by social service agencies. These efforts failed because barriers to implementation were not properly identified and addressed. Historically, educators seem to have been tempted to move forward as quickly as possible with solutions that appeared attractive, but they did not consider underlying conditions. H.L. Mencken once said, "There is a solution to every problem: simple, quick and wrong." That observation should guide us when considering the implementation of a promising practice in a rural setting. Solutions that are wrong for the setting should be discarded and the search continued for those that will be the most effective for each rural school. They are out there.

End Notes

[1] Zaltman, G., Florio, D.H. and Sikorski, *L.A. Dynamic Educational Change: Models, Strategies, Tactics and Management*. New York: The Free Press, 1977.

[2] Corcoran, T. and Wilson, B.L. *The Search for Successful Secondary Schools: The First Three Years of the Secondary School Recognition Program*. Philadelphia: Research for Better Schools, 1986, p. ix.

[3] Ibid., p. 5.

[4] Herriott, R.E. and Gross, N. *Dynamics of Planned Educational Change: Case Studies and Analyses*. Berkeley: McCutchan Publishing Corporation, 1979, p. 11.

[5] Rosenblum, S. and Louis, K.S. *Stability and Change: Innovation in an Educational Context*. New York: Plenum Press, 1981, p. x.

[6] Ibid., p. 269.

[7] Ibid., p. 252.

[8] Ibid., p. 262.

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VERY
SPECIAL
ARTS
WISCONSIN
Enriching the lives of people with disabilities

RURAL MODEL PROJECT

Funded by the Department of Public Instruction
A cooperative effort of CESA #9 and Very Special Arts Wisconsin

Summary of the Project to Date

Project Components:

Scholarship Series/VSA WIS Artist in Residence

- Seventeen teachers and one aide have been selected to receive fifteen hours of adaptive arts training. Seven districts are involved in this pilot program.
- Eleven VSA WIS Artist in Residence grants have been awarded with artists to be trained by VSA WIS in early February. All residencies will be planned and implemented with consultancy support from VSA WIS.

A DPI Arts for EEN Student Curriculum Guide workshop will be held on February 29, 1991.

Additional workshops in adaptive arts strategies are being planned in districts without scholarship participants.

Students with special needs will be eligible for a scholarship involving one day of multi-arts activities at Dillman's Sand Lake Lodge on June 22, 1991.

The One to One Program is being initiated in cooperation with the Dawn Troyer Dance Studio in Wausau, Wisconsin. The program will offer students with special needs to experience movement and dance.

VSA WIS will be working with area band directors to bring the UW Band Program to the northwoods.

The district continues to solicit volunteer support of VSA WIS programs and train local volunteers through participation in state run training workshops such as the Advisory Council to be held in Wausau on March 1 and 2.

1955 West Broadway
Suite 101
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Voice/TDD (608) 223-0661

VERY
SPECIAL
ARTS
WISCONSIN
Enriching the lives of people with disabilities

Very Special Arts Wisconsin Fact Sheet

MISSION: To provide arts opportunities for children and adults with disabilities in Wisconsin.

THE NEED: One out of 10 people has a disability.

ACCREDITED: by Very Special Arts, an international organization and an educational affiliate of the John F. Kennedy Center for the Performing Arts.

INCORPORATED: 1985

PROGRAMS: State, District and Local Festivals, Artist in Residence, Permanent Collection, Scholarship, VSA/UW Marching Band, One-to-One Program, VSA Choir, Young Playwrights, and Training.

NUMBERS REACHED: 1990-91 20,000 projected
(150,000 hours of arts experiences)

VOLUNTEERS: Over 2,000 annually

STRUCTURE: Twelve Districts. Volunteer District Committees carry out Board approved programs and goals.

BOARD: Sue Ann Thompson, President
Teacher/First Lady of the State of Wisconsin

INCOME: Broad based....state and federal, businesses, foundations, service organizations, individuals, and special events. Inkind projected at $150,000.

AWARDS: Only state to receive 4 VSA National Awards of Excellence

1955 West Broadway
Suite 101
Madison, Wisconsin 53713
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VERY SPECIAL ARTS WISCONSIN

Enriching the lives of people with disabilities

Very Special Arts Wisconsin is a non-profit, volunteer based organization enriching the lives of children and adults with disabilities through programs in the arts. Accredited by **Very Special Arts**, an educational affiliate of the John F. Kennedy Center for the Performing Arts, **Very Special Arts Wisconsin** provides opportunities in music, dance, drama, creative writing and the visual arts. **Very Special Arts Wisconsin** seeks to establish avenues through which people with disabilities may enter the mainstream of society and to promote statewide awareness of the educational and cultural benefits of the arts for all people.

VERY SPECIAL ARTS WISCONSIN (VSA WIS)
PROGRAMS AND PROJECTS
1990

FESTIVALS:

At the heart of the organization are the VERY SPECIAL ARTS FESTIVALS: non-competitive forums for children and adults with disabilities to display their accomplishments in the arts.

The VERY SPECIAL ARTS WISCONSIN STATE FESTIVAL is the culmination of year-round programming throughout the state. Participants of all ages and from locations across Wisconsin join together for a day-long celebration of their accomplishments in the arts. The Festival consists of workshops in dance, drama, music, visual art and creative writing. Performances and exhibits conducted throughout the day showcase work done by individuals and groups participating in VSA WIS programs, including One to One, Artist in Residence, Young Playwrights and New Visions Dance.

VERY SPECIAL ARTS DISTRICT AND LOCAL FESTIVALS consist of a day or two of celebration, with workshops in dance, drama, music, visual art and creative writing, as well as performances and exhibits. Festivals are the culmination of year-round programming efforts in local areas. During 1990 we anticipate at least 12 festivals will be held in Wisconsin, in addition to the State Festival. Approximately 7000 participants will be involved.

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INTEGRATED ARTS:

The **VERY SPECIAL ARTS ARTIST IN RESIDENCE PROGRAM (AIR)** places paid professional artists in schools and facilities to work with both participants and staff on a specific art project. The end project will be performed or displayed at state, district and/or local festivals. Artists with experience, or who express an interest, in working with people with disabilities are recruited and trained for this program. Agencies/schools chosen for the AIR program will take part in a VSA WIS orientation, as well as trainings specifically directed to the project, and must be willing to send participants to state, district or local festivals.

The **VERY SPECIAL ARTS ONE TO ONE PROGRAM** matches volunteer artists with people with disabilities for the purpose of exploring a specific arts modality. Participants are matched with volunteer artists through community outreach projects, as well as other VSA WIS projects. VSA WIS relies upon service organizations which provide volunteer artists to work with children and adults with disabilities in schools, community centers and residential facilities. One to One matches are also made within the following programs: VSA/University of Wisconsin Marching Band, VSA Young Playwrights, VSA Purchase Award, and VSA Choirs. Artists will take part in a VSA WIS orientation, and additional trainings will be made available as needed.

THEATRE:

The **VERY SPECIAL ARTS YOUNG PLAYWRIGHTS PROJECT** provides opportunities for students aged 12-18 to develop their interest and skills in writing for the stage. In this integrated project, students with and without disabilities create original scripts relating to some aspect of disability in contemporary society. Scripts are submitted for competition at both the state and national levels. All participants in Wisconsin are invited to attend the VSA WIS Young Playwrights Day, where participants attend workshops and winning scripts on the state level are produced or read. Winning scripts on the national level are presented at the John F. Kennedy Center for the Performing Arts in Washington, D.C.

VISUAL ARTS:

The **VERY SPECIAL ARTS PURCHASE AWARD** assists and encourages the further education and development of Wisconsin artists with disabilities. Individuals participating in VSA WIS programs, as well as other artists with disabilities in Wisconsin may enter their visual artwork in competition for cash and/or arts materials awards. Winning pieces become part of the VSA WIS permanent collection and will be exhibited at the VSA WIS State Festival, the Madison Art Fair on the Square, and at other designated sites.

MUSIC:

The **VERY SPECIAL ARTS/UNIVERSITY OF WISCONSIN MARCHING BAND PROJECT**, initiated in 1988, was the brainchild of University of Wisconsin (UW) Marching Band Director Michael Leckrone. Utilizing a component of the VSA One to One Program, this project pairs high school students with disabilities with "buddies" from their school bands in tutorial settings. Students study an instrument, and practice designated music and marching curricula weekly. Rehearsals culminate in "Very Special Saturday," a special event showcasing participants at a UW-Big Ten football game. Educational materials are supplied by VSA WIS as a guide for implementing the One to One component, for both teachers and students. The project is also showcased throughout the year within the participating high schools. This project will be duplicated at other UW System campuses.

VERY SPECIAL ARTS CHOIRS invite community members and students, with and without disabilities, to join together in vocal ensembles. Under the direction of a music specialist or music therapist, participants practice as a group, on a regular basis. Choirs may perform at state, district and/or local festivals, as well as other special events.

DANCE:

The **VERY SPECIAL ARTS NEW VISIONS DANCE PROJECT** teaches movement and dance skills to children and adults who are visually impaired through work with professional dancers. Based on the work of VSA and the Alvin Ailey Dance Co., VSA WIS, in cooperation with Madison's Kanopy Dance Co., began this special project through workshops for students from the Wisconsin School for the Visually Handicapped. Students involved in this project may perform at state, district and/or local festivals, as well as other events.

SCHOLARSHIPS:

The **VERY SPECIAL ARTS SCHOLARSHIP** is designed to encourage and enable a graduating high school senior with a disability to further develop his/her artistic abilities. This student will serve as a model for other young artists. Students eligible for this award must be Wisconsin citizens and accepted in an accredited institution of their choice to study an art form.

TRAINING:

VERY SPECIAL ARTS WISCONSIN PROGRAMS include orientation, trainings, and materials geared to specific program needs.

SERVICE TRAINING will provide resource information, program consultation services (development and evaluation), direct program services, and inservice training expressly geared to the agencies' needs in the areas of arts programming for individuals with disabilities.

VSA WIS staff is available to speak/offer workshops to organizations, volunteers and other groups requesting information.

FOR ADDITIONAL INFORMATION CONTACT:

VERY SPECIAL ARTS WISCONSIN
1955 WEST BROADWAY
SUITE 101
MADISON, WI 53713
(608) 223-0661/TDD

Special Olympics
Wisconsin

RURAL SCHOOL SPECIAL OLYMPICS MODEL PROJECT FACT SHEET

Mission: The mission of the Model Rural School Project is to incorporate Special Olympics sports training and competition programs for individuals with mental retardation into existing school sports programs. Each participating school district will select and implement Special Olympics programs which best meet the unique challenges faced by their rural setting. (Rural is defined as a community with a population of less than 99,000.)

Target: The project involves 25 different school districts located in nine northern Wisconsin counties and within four Cooperative Educational Service Agency's (CESA) regions. This ambitious undertaking addresses elementary, middle, and senior high schools.

The program currently involves 17 elementary, middle, and senior high schools serving more than 250 athletes. At the on-set of the project only seven of the 25 school districts offered Special Olympics, and there were only 184 registered athletes. It is estimated that there are 1,396 students with mental retardation in these 25 school districts. The Model Rural School Project's primary goal is to reach as many of these potential athletes as possible.

Sponsors: The Wisconsin Department of Instruction, Wisconsin Special Olympics, and Special Olympics International have jointly sponsored the Model Rural School Project. The Department of Public Instruction has allotted two discretionary grants totalling $117,000 to partially fund the project and Special Olympics will provide resource materials, coaches, training, advanced competition, and technical assistance. Copps food is a corporate sponsor of the project.

Programs: Included among the primary programs that school districts have chosen to incorporate are School Sports Partnerships, Partners Clubs and traditional Special Olympics training and competitions opportunities.

School Sports Partnerships are structured for Special Olympics athletes to train alongside their interscholastic athletic compatriots during practices. They then compete against other Special Olympics teams during the framework of regularly scheduled interscholastic sports competitions. For example, last April Special Olympians from Wausau, Merrill, D.C. Everest, and Stevens Point participated at the Wisconsin Valley Indoor Track meet in the 100M and 400M relays in their own divisions. Winners received the same award presented to non-handicapped competitors.

Partners Clubs give students without handicaps the chance to serve as peer coaches to Special Olympics athletes. These coaches utilize sports training manuals and resources provided by Special Olympics to assist in their instruction. Stevens Point Area Senior High provides this opportunity to their handicapped and non-handicapped students. Traditional Special Olympics sports training and competitions are another available component. Special Olympics offers training and materials to physical education teachers,

(OVER)

special education teachers, and coaches that demonstrate how to effectively teach students with mental retardation sports skills. These instructional manuals, referred to as Sports Skills Program Guides, can be used within existing physical education curriculums. Other options that can be offered include making Special Olympics athletes varsity athletic letters, and providing official school uniforms to Special Olympics athletes for competitions.

Kick-off: A kick-off press conference was held October 20, 1989 featuring Victor Contrucci, Assistant Superintendent-Department of Public Instruction, Dr. Patricia Krebs, Director of Education-Special Olympics International, Dennis Alldridge, Executive Director-Wisconin Special Olympics, Jerry Eilola, Project Director-Wisconsin Special Olympics, and Jeff Jung, Merle Cooney, Kim Korbel, Chuck Liebe, four Special Olympians from Stevens Point Area Senior High.

More than 65 educators and athletic directors, as well as representatives from the Wisconsin Interscholastic Athletic Association were in attendance.

Keys to Success:

* Jerry Eilola, Project Director - Jerry is a full-time paid Project Director. He was hired for a two-year position using the monies allotted by the Department of Public Instruction. Jerry's 15 years of experience as a Special Olympics Area Director, as well as his 22 years of experience as a physical education teacher, coach, and referee are crucial to his success as a director.

* Department of Public Instruction - The Model Rural Schools Project would not have gotten off the ground without the public endorsement of Wisconsin Special Olympics and the financial support given by the Department of Public Instruction. Jim Despins, Supervisor of Programs for the mentally retarded for the Department of Public Instruction, with other key administrators throughout the state initiated the model program and continues to serve on the advisory committee.

* Advisory Committee - The advisory committee meets quarterly and is made up of key individuals from all levels of the organization. Members include representatives from international, state, area, and local Special Olympics as well as administrators from the Department of Public Instruction, CESA # 9, a local school program, and a conference commissioner.

FOR MORE INFORMATION CONTACT:
Jerry Eilola
CESA 9
P.O. Box 449
328 N. 4th Street
Tomahawk, WI 54487
(715) 453-2141

RURAL SCHOOL SPECIAL OLYMPICS
MODEL PROJECT

MOST COMMONLY ASKED QUESTIONS

1. Who is responsible for implementing the program?

   The rules and regulations developed to implement the law. PL94-142 defines physical education as programs to develop physical and motor fitness, fundamental motor skills and patterns, skills in equatics, dance, individual and group games and sports, including intramural and lifetime sports.

   (1a) Should this be attached to the special education department or athletic department?

   The mission statement of S.O. is "to provide sports training and athletic competition in a variety of Olympic type sports.

2. Who pays for the program?

   Proposed budget for each LEA depending on number of athletes, rental fees, state games fees, travel and number of sports offered.

   (2a) Who's budget - special education or athletic department?

   Varies but most schools enter S.O. under athletics because it is of an athletic nature.

3. Who does all the paperwork?

   The agency representative is the individual who registers the program and agrees to be the contact person for the agency. They also receive all mailings, phone calls and paperwork for the agency. They forward information to their coaches as appropriate.

4. Who coaches the athletes? Are the coaches paid?

   A planned regiment of training under a volunteer coach, teacher or parent is considered an organized training program. Some coaches are paid and some are not. This is up to each district.

5. How can we fit one more program into our facility schedule?

   By combining practice sessions (partners club) or finding alternative sites. (YMCA, elementary school etc.)

6. If training and competition take place after school hours, what do we do about transportation?

   Schools offering transportation for other athletes have the Special Olympians board the same buses, some districts do not provide transportation for any athletes.

7. Who is liable if something happens?

   Being a school type of activity, it is treated the same as any other sport would be. Also, Special Olympics International does carry a seperate policy. Information concerning the schedule of insurance may be obtained from the Chapter office.

8. Special education students have the opportunity to try-out for interscholastic sports, why do we need to provide a segregated program?

   Most physical education programs teach sports skills to students who in turn have the opportunity to use learned skills in intramural, interscholastic, community recreation and personal sports activities. However, for most students with mental retardation, the opportunity to participate in the above activities is often never manifested because they do not receive the additional training and competition opportunities needed to develop their skills.

9. What's in it for our school? Why should I bother?

   There are many reasons such as:

   Increased media coverage, families of Special Olympians in your community will become active, supportive and more aware of your school program and your program will develop good community relations.

10. Shouldn't you be speaking at the Special Education convention rather than the WADA convention?

    Presentations and information booths are and have been taking place at the WADA, WAHPERD, CEC, and several other teachers conventions to promote Special Olympics and to provide valuable information about school programs.

11. What is our first step in implementing the program? Who should I call for help?

    The first thing to do is to register your program with Wisconsin Special Olympics, a phone call to WSO - 608-222-1324, will get you off and running.

12. Who is Special Olympics for?

    Special Olympics was created and developed to give individuals with mental retardation the opportunity to train and compete in sports activities.

13. What if we don't have enough students who qualify to make up a "team"?

    A Special Olympics Training Program or agency may consist of 2-3 athletes. Eligible athletes must be 8 years old, there is no upper age limit.

Special Olympics

JOIN THE WORLD OF WINNERS!

Special Olympics and Education: Perfect Partners

When Special Olympics and school sports programs join together in a partnership -- great things happen:
**Students with mental retardation become part of one of the most admired groups - student athletes. What an enormous breakthrough for those traditionally left out of most extra-curricular activities.*
**Students with mild mental retardation, often sensitive about participating in programs for people with handicaps, are proud to be on Special Olympics partnership teams with non-handicapped athletes..*

Eunice Kennedy Shriver, Founder and Chairman
Sargent Shriver, President

Sports play a major role in the lives of students, whether they are participating on the field of play or cheering from the grandstand. School physical education programs teach sports skills to students, who then have the opportunity to use these skills in intramural, interscholastic, community recreation and personal sports activities. However, for most students with mental retardation, the opportunity to participate in sports activities often remains unfulfilled because the additional training and competition opportunities needed to develop their skills are not available.

Together, Special Olympics and schools can provide additional training and competition opportunities through existing physical education and after school sports programs. Here students with mental retardation learn to play a sport properly and compete against their peers.

Special Olympics is a means to an end; not an end in itself. The ultimate goal is to assure that an appropriate sports training and competition program exists for all students with mental retardation.

Goals of the Perfect Partnership

- To provide sports and fitness training for all students with mental retardation.
- To provide competition for all trained athletes with mental retardation to test their newly acquired sports skills.

How Schools Can Do This

- Use Special Olympics Sports Skills Guides to teach sports skills to students with mental retardation during the applicable units of physical education.
- Use Special Olympics Sports Skills Guides to train athletes with mental retardation as part of the extra-curricular sports program.
- Use Special Olympics Motor Activities Training Program to bring severely handicapped students with mental retardation into the regular physical education setting.
- Provide integrated sports training and competition opportunities through implementation of Partners Clubs, School Sports Partnerships, and Unified Sports.
- Arrange for eligible athletes to participate in Special Olympics local, area, and state competitions as a culmination of their school sports experience.

School Support

- Sponsor pep rallies for Special Olympics teams.
- Include pictures of Special Olympics athletes and teams in yearbook and newspaper articles.
- Award school athletic letters for successful training and competition in Special Olympics sports.
- Arrange for Special Olympics events at interscholastic games and meets.
- Provide Special Olympics athletes with school sports uniforms.
- Arrange for Special Olympics athletes to ride the school team bus to school competitions and Special Olympics competitions.

Special Olympics Support

- Provide Special Olympics Sports Skills Guides for a nominal fee.
- Provide 6-8 hours of in-service training for athletes, students and teachers who will be coaching Special Olympics athletes.
- Provide technical assistance to schools as needed.
- Annually provide Special Olympics competition opportunities in a variety of sports.

Sports Training and Competition Opportunities

Special Olympics is unique in that it accommodates athletes at all ability levels. By providing an array of sports training and competition opportunities in 22 sports, Special Olympics provides an appropriate successful experience based on the physical and social skills of each athlete.

-**Motor Activities Training Program** is a comprehensive motor activity and training program designed for athletes with severe handicaps whose physical or behavioral limitations preclude participation in official Special Olympics sports.

-**Individual skills** are for athletes who have the prerequisite motor skills and are now acquiring specific sport skills needed to play a particular sport. For example, in basketball, these include field goal, speed pass, dribble and rebound skills.

-**Modified events** accommodate athletes who have limited ability to understand intricate team sport rules and strategies of play. Events include half court basketball, six-a-side soccer and tee softball.

-**Team and Individual sport** training and competitions abide by rules of the International Sports Federation and National Sports Governing Bodies. They are the highest ability level of Special Olympics competition.

Divisioning

Special Olympics accommodates athletes of all ability levels and ensures success through its divisioning process for competition. After grouping athletes in events by age and gender, they are further grouped by ability through competition divisions consisting of three to eight competitors or teams. The range in qualifying times or scores among all athletes or teams in a division can be no greater than ten percent, providing all athletes with an equal chance of winning and advancing to chapter, national, and international competitions.

Integrated Sports Opportunities

Special Olympics has developed three sport programs that specifically integrate students with mental retardation into existing school sports programs:

- **Partners Clubs** unite high school or college students with Special Olympics athletes in an environment that provides sports skills training and athletic competition on a regular basis, as well as opportunities to enjoy other social and recreation activities in the school and community (i.e., parties, dances, field trips).

The Partners Club is a sanctioned school club with a faculty advisor and officers who network with school administration, athletic and physical education departments. Club meeting frequency and format should follow normal school club policies and procedures. Members may include varsity or junior varsity athletes and students with a particular career or sport interest. The local Special Olympics program provides on-going technical assistance to ensure proper sports training for all.

Training and Competition Components

* All Partners attend Special Olympics training school.
* All Partners utilize Special Olympics Sports Skills Guides and skills assessments for training Special Olympics athletes.
* Each Partner coaches the same athlete for a minimum of eight weeks prior to the first level of competition in that sport.
* Partners plan and conduct Special Olympics mini-competitions prior to Special Olympics local competition.
* Partners attend Special Olympics local, area and state Special Olympics competitions to cheer for their team and serve as assistant coaches.
* Partners help plan and facilitate the transition of Special Olympics athletes from school to community sports and leisure activities.

- **School Sports Partnerships** expand existing after-school sports programs to include training and competition for students with mental retardation in conjunction with interscholastic sports teams.

Training and competition are supervised by the school's head coach in a particular sport or an assistant coach specifically assigned to Special Olympics teams. Stipend and number of coaches needed follow normal school policy and procedure. Athletes without handicaps from varsity and junior varsity sports teams serve as peer coaches, scrimmage teammates and boosters during competition.

Training Components

* Integrate warm-up, cool-down and conditioning activities with varsity athletes.
* Practice skill development using a station format with peer coaching by varsity athletes where possible.
* Provide ample opportunities for a variety of scrimmages between Special Olympics athletes and varsity/junior varsity athletes; mixed teams of athletes drawn from all sports teams, and Special Olympics teams.

Competition Components

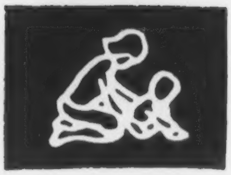
* Conduct competition among athletes with disabilities alongside existing interscholastic competitions. For example, in a track and field meet, a varsity 100 meter dash is followed by a Special Olympics 100 meter dash. In distance races, all athletes start together. Meet scores are tabulated for varsity, Special Olympics and Partnership teams.
* Conduct Special Olympics competitions just prior to varsity or junior varsity competitions. For example, Special Olympics basketball games are played prior to and at the same site as the varsity or junior varsity game and against a team from the same school.
* Conduct a tournament for Special Olympics partnership teams in conjunction with varsity tournaments.

- **Unified Sports** leagues bring together, on the same team, equal numbers of athletes with and without mental retardation. Team unity facilitates social interaction, friendship and cooperative team play. Currently, Special Olympics Unified Sports are established in bowling, basketball, softball, volleyball, soccer and distance running, with pilot programs under development in several more sports.

Team members without mental retardation can be members of a school civic organization or students interested in teaching and supporting persons with mental retardation. They should be willing to interact socially in non-sport activities with their teammates with mental retardation.

Unified Sports leagues can be part of the school's interscholastic sports program, intramural sports program or community recreation program and should receive the benefits accorded to teams in that sport league.

Portage Project. A family-focused, home-based approach to serving young children with multicategorical disabilities.



Audience Approved by JDRP for children with disabilities who are functioning between the ages of 0-6. Appropriate for preschool, pre-kindergarten, and Head Start home-based programs.

Description The *Portage Project* is a home-based intervention program for young children with disabilities and their families. The family-focused program maximizes the child's development and supports family functioning through regular home visits designed to accomplish IEP/IFSP goals and objectives. The model, whether employed totally in the home or in a classroom-home combination program, centers on a home visitor meeting with caregivers in the home on a weekly basis to assist them in identifying and addressing goals for the child and family.

The home visitor and family jointly identify goals for the child based on the child's developmental needs and the desires, interests, and cultural mores of the family. To facilitate the greatest amount of carryover of the child's goals, they are implemented through naturally occurring activities that the child and caregiver normally participate in on a daily basis. Play activities are also used as a means of addressing child goals and enhancing caregiver-child interaction. During the visit, parent and home visitor spend time discussing actions taken to address family goals and planning additional strategies.

The project was originally funded by the Bureau for Education of the Handicapped from 1969 to 1972. Since then the direct services component of the project has been locally supported by 14 school districts in south-central Wisconsin in cooperation with the Wisconsin Department of Public Instruction.

Requirements Administrative commitment to a family-focused intervention model that addresses child and family goals is a prerequisite for successful implementation of the *Portage Model*. At least one home visitor is needed to work with families on a weekly basis. Resource personnel should be available to assist in formalizing child and family goals and developing implementation strategies.

Services Adoption training typically consists of two-three days of instruction in the model components including child and family assessment, planning and implementing child activities, working with families, and data collection. Training can be modified to meet the needs of each particular agency. Adoption training is periodically scheduled in Portage, Wisconsin, or can be arranged at a host site, sometimes in collaboration with one or more interested schools/agencies. Training materials are supplied at no cost. Project staff are available for out-of-state awareness and conference presentations or to provide training in model components (i.e. Working with Families, Transitioning, Assessment, etc). Costs for project materials are available upon request.

Contact **Julia Herwig, Director; Portage Project; P.O. Box 564; Portage, WI 53901. (608) 742-8811.**

Developmental Funding: USOE, SEP, NDN

JDRP No. 75-75 (11/10/75)
Recertified (1/85)

High/Scope Preschool Curriculum (formerly Cognitively Oriented Preschool Curriculum). A preschool program with the designated purposes of mainstreaming mildly and moderately handicapped children with nonhandicapped children and serving early childhood programs in general.

Audience Approved by JDRP for preschool children of all abilities.

Description The *High/Scope Preschool Curriculum* is an open-framework model derived from Piagetian theory. The curriculum originated from one of the first early childhood intervention programs of the 1960s, the Ypsilanti-Perry Preschool Project, and was further developed with funding as a demonstration project in the First Chance Network for preschool handicapped. Through designated key experiences for children, teaching and parenting strategies, and child-observation materials, the curriculum provides a decision-making framework. Within this framework, teachers design a classroom program that reflects the expressed needs and interests of the children being served. This approach emphasizes the identification of the child's status on a developmental continuum by examining his/her strengths and accomplishments. The project views discrepancies in behavior between handicapped and nonhandicapped age peers as developmental delays, not as deficiencies. Basing their tasks on this orientation, teachers initiate developmentally appropriate experiences in the classroom that reflect the basic long-range goals of the program. These goals are to develop children's ability to use a variety of skills in the arts and physical movement; to develop their knowledge of objects as a base of educational concept; to develop their ability to speak, dramatize, and graphically represent their experiences and communicate these experiences to other children and adults; to develop their ability to work with others, make decisions about what to do and how to do it, and plan their use of time and energy; and to develop their ability to apply their newly acquired reasoning capacity in a wide range of naturally occurring situations and with a variety of materials. The plan-do-review sequence encourages children to achieve these goals by involving them in decision-making and problem-solving situations throughout the day. The teacher's role is to support the children's decisions and encourage them to extend learning beyond the original plan. Similarly, teachers rely on a basic room arrangement and daily routine designed to stimulate and support active learning.

Requirements The model can be used in an individual classroom. Inservice training for the classroom teaching team is required.

Costs The approximate cost per child for the initial year of implementation is $171 for personnel training, $55 for materials, and $23 for trainer travel. Total cost for the second and subsequent years is $48 per child. Cost calculations assume that the curriculum is being adopted by an existing program; personnel and facility costs for the classroom are not taken into account.

Services Awareness materials are available at no cost. Visitors are welcome at project site by appointment. Project staff is available to attend out-of-state awareness meetings (costs to be negotiated). Training is provided at project site (expenses must be paid). Training is also conducted at adopter sites (expenses must be paid).

Contact **Clay Shouse, Manager; Development & Services; High/Scope Educational Research Foundation; 600 N. River St.; Ypsilanti, MI 48198. (313) 485-2000.**

Developmental Funding: USOE BEH

JDRP No. 79-9 (3/28/79)

ACTIVE: All Children Totally InVolved in Exercising. A diagnostic/prescriptive physical education program that provides teachers with the skills, strategies, and attitudes necessary to initiate a physical activity program for handicapped and normal individuals.

Audience Approved by JDRP for handicapped, ages 6-60, nonhandicapped, grades K-9, physical education teachers, special educators, recreation teachers, and para professionals. It has been used in other settings and grades.

Description *Project ACTIVE* has been developed to serve handicapped individuals, but is equally applicable to slow learners and normal and gifted children. *ACTIVE* offers a training program to provide teachers with those skills/strategies necessary to implement an adapted physical education program, diagnostic/prescriptive curriculum manuals and materials addressed to the entire gamut of handicapped conditions, and consultant services to assist implementers during the installation phase. Program strengths include extreme flexibility for adoption/adaptation, a total curriculum package that can be implemented immediately at minimal cost, compliance with the federal mandate requiring "written education programs for the handicapped population," unlimited support services to enhance successful implementation, and accountability features to enhance administrator/ community support. Student instruction is based on instruction format (i.e. the program is structured to ensure that trainees acquire the skills, knowledge, and attitudes stressed), with emphasis on trainee exposure to handicapped individuals in a field setting. Participants are trained to diagnose and assess pupil strengths and deficiencies and to prescribe motor, perceptual-motor, physical fitness, posture, nutrition, and diaphragmatic breathing tasks accordingly. *ACTIVE* has developed low motor ability, low physical vitality components for mentally retarded, learning disabled, and emotionally disturbed student populations. No special facilities are required. Comprehensive programs can be initiated in limited space. A 30' x 60' area removed from other teaching stations is ideal. If P.E. equipment is available, cost per school varies between $50 and $300. District commitment includes implementation of at least one aspect of the *ACTIVE* program in three or more classes that meet for a minimum of three 30-minute periods per week for one year, allocation of time for the trainee to train at least one staff member, and transmission of pre/post data and end-of-year evaluation report to project.

Requirements Program may be implemented in a single class, a school, or an entire district. Five discrete curriculum components enable the district/agency to adapt the program to students with varying abilities in grades pre-K through 12. Training programs are adapted to comply with needs of the teachers and schools. Existing personnel can be used to obviate the need for additional staff (e.g. by inclusion of the *ACTIVE* program in the special education curriculum or by use of the team teaching approach.) Instructional facilities may vary from 30' x 30' to 30' x 60'. Implementation schedules for each trainee must be submitted to the project prior to training.

Costs *Project ACTIVE* Program Implementation materials ($50) provide guidelines for planning an individualized-personalized physical education program for students with any type of handicap. Other supplementary materials are available. Unit orders are available and must be prepaid). Installation costs are minimal. Personnel can be reassigned. Regular P.E. equipment can be used. Materials are available at the address below.

Services Awareness materials are available at no cost. Visitors are welcome at project site two days per month between October and May and at additional demonstration sites in home state and out of state. Project staff may attend out-of-state awareness meetings (all expenses must be paid). Training may be conducted at project site during the last two weeks of each month from October to May (adopter pays only its own costs plus cost of texts). Training is also available at adopter site (adopter pays own costs, including $50 for mini-course text). Follow-up services are available to adopters.

Contact **Joe Karp, Director; Project ACTIVE; 13209 NE 175th, c/o Sorenson Bldg., Woodinville, WA 98072. (206) 485-0427.**

Developmental Funding: USOE ESEA Title III

JDRP No. 74-97 (9/18/74)
Recertified (1/85)

ADAPT Project. A program that provides a comprehensive, replicable service delivery model for secondary and postsecondary learning disabled students. The project also increases the number of students receiving full-time service in the educational mainstream, reduces the dropout rate of learning disabled students, and improves their basic academic skills.

Audience Approved by PEP for secondary learning disabled (LD) students (grades 6-12) and learning disabled adults in postsecondary vocational education programs.

Description *Project ADAPT* augments a school's existing LD service delivery system, improving the structure by increasing knowledge, skills, awareness, communication, and coordination. Central to the program is the concept of producing student outcomes through two key elements: changing the way teachers teach (Teacher ADAPTation) and changing the way students learn (Student ADAPTation). A two-day training for resource room personnel, a team of content area teachers, and support staff is the initial activity. The returning team works to modify existing structual and attitudinal barriers.

Three key areas for teacher adaptation are utilized: teaching skills, curricula and materials, and collaboration. The project training process instructs teachers in using alternative organization, management, presentation, practice, and assessment techniques to adapt the regular classroom environment for the LD student. All teachers learn to assess both their curricula and their teaching materials for appropriateness.

Student adaptation is in the domain of the resource teacher. The two program components focus directly upon the needs of secondary and postsecondary LD students: re-teaching and adaptive skill instruction. The goals are to remediate basic skill deficiencies and to equip learners with skills that will transfer to the regular classroom and the world of work.

Evidence of Effectiveness Twenty-two percent of learning disabled students were mainstreamed on a full-time basis after one year in the project; 43 percent after two years (national mainstreaming rate is 15 percent). Fewer than five percent of LD students dropped out of school (national rate for LD student is 38 percent). LD students in the program achieved greater than expected gains in basic academic skills.

Requirements For schools that have an LD program, no special staff are required. Two days of training for the core group is required. The major prerequisite is a moderate level of staff commitment. Minimal equipment and supplemental materials for students are suggested.

Costs The cost for adopting the project is travel, lodging and per diem for one trainer during the two-day training, Training Manual ($25.00) for each participant, and a training fee.

Services Awareness materials are available at no cost. The project staff is available for awareness sessions (costs to be negotiated). Implementation and follow-up services available to adopters (costs to be negotiated). Statistical analysis of evaluation data is provided to all school districts submitting pre-post-tests scores.

Contact **Celia Meyers; 123 E. Broadway; Cushing, OK 74023. (918) 225-1882.**

Developmental Funding: Title VI-G Child Service
Demonstration Center, state, Office of
Special Education and Postsecondary Demonstration Projects.

PEP Approval No. 90-06 (2/9/90)

Elsmere Project. A basic skills vocational program for trainable mentally retarded, ages 5-21, that serves as a model for districts implementing special education programs in compliance with P.L. 94-142.

Audience Approved by JDRP for students ages 5-21 classified by child-study teams as trainable mentally handicapped (TMH).

Description The *Elsmere Project* meets the individual needs of TMH students by providing individualized scheduling of instruction in five essential areas: academics, socialization, independent living, prevocation, and vocation. For each area, the curriculum has a double orientation. First, the program emphasizes the acquisition of self-sufficiency to the highest degree possible. The project prepares students to function in the community, to work, travel, shop, enjoy leisure time and relate to others. Second, vocational skills are presented through these learning areas. Thus, skills and attitudes necessary for engaging in work are emphasized in all learning areas.

Each student is exposed to a simulated work atmosphere, punching a time clock and so on. Students are involved in rudimentary training and work activities such as assembling, packaging and collating. Students participate in a vocational training program which reflects community manpower needs. On-the-job training is provided for students in the final stages of the training program. The Glassboro Trainable Assessment Profile (G-TAP), assists the teacher in placing students at the correct functioning level in each of the life skill areas. It is also a useful tool to measure yearly growth and assist the childstudy team in developing objectives for the Individual Educational Plan (IEP).

Because area business leaders are potential employers of TMH citizens, community involvement is an integral part of the project. On-the-job training and student job placement occur through community involvement. Advisory groups and service organizations assist the project by providing information on the skills necessary to prepare students for particular jobs.

Parent interest and participation is another component in the success of the *Elsmere Project.* Parents are provided the background required to perform activities at home that reinforce vocational skills taught at school.

Requirements The *Elsmere Project* is best adopted at the school level, but smaller units (one, two, or three classrooms) can make adoptions. A two-day or three-day training workshop must be attended by teachers and participating administrator(s). Adopter agrees to use project-designed student evaluation scale and to furnish data for comparison. Strong administrative support helps to ensure successful adoption.

Services Awareness materials are available at no cost. Visitors are welcome at original (school site) in Glassboro, NJ by appointment. Project staff is available to attend out-of-state awareness meetings (costs to be negotiated). Training is available at project site or adopter site (all expenses must be paid, including trainer's fee). Implementation and follow-up services are available to adopters all expenses must be paid, including trainer's fees.) Start-up costs for training and curriculum materials: approximately $300 per teacher. Costs for vocationally related equipment and supplies vary depending on resources available. Maintenance costs are minimal.

Contact **Monika Steinberg, Project Manager, Elsmere Project; Educational Information and Resource Center (EIRC); 700 Hollydell Court; Sewell, NJ 08080. (609) 582-7000, FAX (609) 583-4206.**

Developmental Funding: USOE ESEA Titles III and IV-C

JDRP No. 79-23 (5/17/79)

I Can-ABC. Improving the quality of physical education instruction for ALL students preschool through secondary.

I CAN
Achievement Based Curriculum Model

Audience Approved by JDRP for teachers (special education, physical education, adapted physical education, and/or combinations) of handicapped children in special and/or regular educational programs.

Description The *ABC Model* has five major components to help teachers implement quality school programs: assess, prescribe, teach, evaluate, and plan for essential objectives in physical education for children and youth from near zero to functional level of competency. The curriculum materials (I CAN) represent a bank of 200 student performance objectives for qualitative assessment, prescriptive instruction, evaluation, student reports, and a computer management system for the school program.

The *ABC Model* can be 1) implemented without exotic equipment or facilities; 2) implemented by classroom teachers, physical education specialists, or combinations; 3) adapted to local needs and resources to either develop a comprehensive mastery in learning program, preschool through high school, or supplement an existing program; and 4) implemented by the user in compliance not only with P.L. 94-142 but also in response to school reform movements—pursuit of equity and excellence in American schools for all students.

Evidence of Effectiveness 75% of students achieved meaningful, statistically significant gain score on objectives when the curriculum was implemented as intended; 85% of all teachers trained achieved competencies to implement the *ABC Model*. A school site may achieve certification as a Model Demonstration site by implementing the key elements of the *ABC Model*: document of program goals and objectives, prescribe and teach based on students' assessed needs, evaluate and report student and class progress, make recommendations for improvement based on student data.

Requirements Identify core staff to receive training and implement *ABC: I CAN*. Staff participate in 2-4-1 ABC Inservice Program: 2-Day Workshop to develop skills and knowledge; four follow-up visits within a 12- to 20-week period to support teachers' skill application (assess, prescribe, teach, evaluate); 1-Day Planning Workshop to evaluate implementation effectiveness and develop comprehensive program plan adapted to the class/school. Two options to meet this requirement: Individual receives monitoring training (4 hours) by CT and is provided with *ABC: I CAN* Monitoring handbook.

Services Awareness materials are available at no cost. CT's are available in more than 16 states with Leadership Training Centers located in colleges/universities in 9 states. CT's are available to conduct awareness sessions, provide training, answer questions to help districts fully implement and utilize the *ABC Model* and Curriculum Resource Materials available preschool through secondary. An *ABC—I CAN* videotape is available from your State Facilitator or Project Center. Training costs are shared: school/district, State Facilitator, and Project.

Contact **Luke Kelly, Ph.D.; Project Center ; University of Virginia; Curry School of Education; Ruffner Hall, 405 Emmet St.; Charlottesville, VA 22903, (804) 924-6192.**

Developmental Funding: USOE OSE and State

JDRP No. 81-13 (6/11/81)
Recertified (6/85)

INSITE Model. A home-based program for families of children who are multi-handicapped sensory-impaired (0-5 years) to optimize the children's development.

Audience Approved by PEP for children who are multi-handicapped sensory impaired (0-5 years) and their families.

Description The major goal of the *INSITE* program is to identify young children who are multi-handicapped with sensory impairment as close to their birth as possible and provide them with complete home programming that will facilitate their optimal development.

Specific goals for the program are: the child will be able to interact meaningfully with other persons in the home and with objects in play; use residual sight and/or hearing as well as possible; build a communication system to convey their basic wants, needs, feelings, and observations; and reach the highest level of independence possible. Specific parent goals are: parents will have a warm, positive relationship with the child; understand the child's handicaps; provide a stimulating interactive home environment; and develop the skills and knowledge to become their child's advocate.

Elements of the program include identification and screening, direct services, support services such as physical and occupational therapy and medical services, and a program management system. All aspects of service are provided either directly or indirectly by *INSITE* support staff.

Evidence of Effectiveness A national data system collects yearly information on demographic status and child/parent progress for all participating adoption programs. Data summaries are provided to each program. These summaries allow the program to evaluate its own effectiveness with the families it serves as well as to compare its effectiveness with that of the total body of *INSITE* adopting programs across the country.

Requirements Minimal requirements for program implementation include one full-time or part-time parent advisor to make weekly home visits, basic training for six days, a two-volume *INSITE* manual and other teaching/testing materials, support staff and materials, and a supervisor (for larger programs).

Costs Costs per child for 11 months of service is approximately $1,750 including direct and indirect costs.

Services Awareness materials are available at no cost. Visitors are welcome by appointment at demonstration sites in home state and out of state. Project staff is available to attend out-of-state awareness meetings (costs to be negotiated). Training is available at adopter sites (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

Contact **Thomas C. Clark; SKI*HI Institute; Utah State University; Logan, UT 84322-1900. (801) 752-4601.**

Developmental funding: US Office of Special Education, Handicapped Children's Early Education Program, and the Utah State Legislature.

PEP No. 89-3 (3/24/89)

MARRS: Mainstream Amplification Resource Room Study.

Project MARRS uses sound field amplification technology to enhance instruction, lessen teacher voice fatigue and improve student academic achievement in reading and language arts.

Audience Approved by JDRP for improvement of teaching and quality of instruction in reading and language arts for all students but especially students with mild hearing losses (MHL) grades K-6. The program has been used in regular and special education classrooms early childhood through grade 12 for instruction in all subject areas.

Description Project *MARRS* uses sound field amplification of the regular or special education teacher's voice in the presentation of the school's regular curriculum. Amplification equipment is installed in the classroom and the teacher wears a wireless FM microphone which permits freedom of movement in the classroom. The amplification allows the instructor to maintain a consistent signal approximately 10 decibels above the noise level in the classroom. Thus an improved listening environment is created for all students. Amplification enhances the clarity of oral instructions, promotes student attention, lessens teacher voice fatigue and increases academic achievement scores, particularly for students with mild (MHL) hearing losses who are to be found in all classrooms.

Data from the original study suggest 30% of all students in regular classrooms and as many as 75% of special education students have educationally significant hearing losses, many of which are undetected by routine school hearing screenings. *MARRS* provides a cost efficient alternative/ supplement to resource room instruction for mainstreamed mildly handicapped students as well as an effective environmental modification to benefit all students and teachers. Statistically significant gains in academic achievement are demonstrated by target students in the least restrictive environment at a fraction of the cost of resource room intervention.

In the 1-86 validated study using data from four adopting districts, a pre-post experimental-control group design was utilized to demonstrate that K-6 target students (MHL) receiving instruction in standard classrooms equipped with sound field amplification make statistically significant greater gains in standardized achievement scores than do target students in control (non-amplified) classrooms ($P < .05$).

Requirements No special staff, facilities, or curriculum materials required. The program is designed to enhance the ongoing curriculum, improve teaching, and create an improved listening/learning environment for all students. The adopting district purchases sound amplification equipment which is installed in classroom(s). Following a brief inservice teachers use amplification for oral instructon.

1) One time purchase of sound field equipment, which can be used for years with minimal ongoing costs. Cost per student varies with the number of children in amplified classrooms and decreases with subsequent years as equipment continues to be used. 2) Portion of costs (to be negotiated) for installation and in-service of local staff by project personnel. Release time for teacher inservice is not ordinarily required.

Services An NDN funded Developer Demonstrator Project. Awareness materials are available at no cost. Visitors are welcome at Project sites any time. Project staff is available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted at project site (costs to be negotiated). Implementation and follow-up services are available to adopters.

Contact **Helen Ray, Director, Project MARRS, Wabash & Ohio Valley Special Education District; Box E; Norris City, IL 62869-0906. (618) 378-2131.**

Developmental Funding: USOE ESEA Title IV-C

JDRP No. 81-27 (7/28/81)
Recertified (1/14/86)

Precision Teaching Project. A precision teaching model designed to remediate and build basic skills through practice and drill, setting performance standards, continuous measurement, and data-based decisions.

Audience Approved by JDRP for all students, grades K-4. It has also been used in other settings and the State of Montana has validated the use of Precision Teaching in grades K-12.

Description The overall intent of the *Precision Teaching Project* has been to develop a model for the delivery of educational services to elementary students who have been identified as experiencing learning deficits. *Precision Teaching* procedures have been used not only in identifying these students, but also as remediation tactics. (Precision teaching is a set of measurement procedures based on direct, daily assessment.) A resource room is provided for students with more severe learning deficits, while the regular classroom deals with basic skills and minimal problems. One-minute practice sheets are used extensively as a means of building basic tool skills to a level where students are capable of competing within the regular classroom. Direct and daily measurement procedures are employed, using both the manager and the student in recording and charting. Curricular decisions are based on available data.

Resource teachers as well as regular classroom teachers use the precision teaching procedures, which include curriculum materials developed within the project. Instructional methods include one-minute practice sheets from the *Precision Teaching* materials bank and data-based decisions made from the standard behavior chart.

The costs to the adopter include:

—Training Packets $15 per person

—Implementation Materials $375 per school (approx.)

In addition, the adopter is responsible for travel, lodging and per diem. There is also a negotiable training fee.

Requirements An adoption commitment can be made by a—distict, school, or classroom. Adopting units should include building or program administrators, support personnel (e.g., psychologist), and regular and/or special education teachers. Initial training requires two days and is available at project or adopter site. Additional follow-up training (three days maximum) is provided at the adopter site. In most cases existing facilities can be used.

Services Awareness materials are available at no cost. Visitors are welcome any time by appointment at project site and additional demonstration sites in home state and out-of-state. Project staff is available to attend out-of-state meetings (costs to be negotiated). Training is available the entire year with costs to be negotiated.

Contact **Ray Beck, Project Director; Precision Teaching Project; Sopris West, Inc.; P.O. Box 1809; Longmont, CO 80502-1809. (303) 651-2829.**

Developmental Funding: USOE ESEA Titles III and IV-C

JDRP No.75-25 (5/6/75)
Recertified (5/17/79)

Regional Program for Preschool Handicapped Children. Early intervention for handicapped children ages 3 to 5.

Audience Approved by JDRP for preschool handicapped children.

Description This is a comprehensive program of educational services intended to increase the verbal, perceptual, motor, and general cognitive skills of children with the following handicaps as defined by New York State: speech impaired, emotionally disturbed, multiply handicapped, learning disability, deaf or hard of hearing, visually impaired or blind, mentally retarded, and autistic.

Unique features of the program include: The Interactive Teaching Process in which special education teachers, teacher aides and clinical team members provide diagnostic/prescriptive teaching, language intervention and positive reinforcement on a continual basis in the classroom; The Transdisciplinary Team Model through which team members train each other and share roles in assessment, intervention and consultation; Parent Involvement Model, which includes the parent volunteer system, parent group meetings and an individualized approach to parent participation. Replication Training in each or all components is available to any preschool program. Over 450 classroom sites have replicated the Regional Program Model or component of the model. Manuals describing each component are available at cost.

Impact data collected on demonstration site and adoption site students show that students exposed to a full year of the program made statistically and educationally significant gains compared to national norms as measured by the McCarthy Scales of Children's Abilities. Regarding maintenance of effects, gains made by students during the first year of exposure were maintained after a second phase of instruction. Over 60% of Regional Program graduates since 1980 have been placed in regular school or transition programs when they reached school age. Parent participation and support for the Regional Program is exceptionally high. Parents demonstrate extensive knowledge of program components and report a high level of program satisfaction.

Requirements Any preschool program serving children with special needs, including Headstart programs, may adopt the Regional Program. Special staffing for implementation should include a speech therapist to work with the teacher on a part-time basis and other professionals available as appropriate to the program. The training addresses the three components of the program, The Interactive Teaching Process, Transdisciplinary Team Model and Parent Involvement Model. One or two days of training are provided based on a needs assessment process with the training site. All preschool staff should be involved in the training including teachers, clinical team members and paraprofessionals. Follow-up visitation allows for consultation and training of an on-site program monitor. A staff training manual is available for each component of the program and range in price from $7.50 to $16.00.

Services Awareness materials are available at no cost. Visitors are welcome at project sites by appointment. Project staff is available to attend out of state awareness meetings and conferences. Training is conducted at project site or adopter site (travel, food and lodging must be paid by adopter or cost sharing may be negotiated with State Facilitators).

Contact **Carol S. Eagen, Supervisor; Preschool Program; Special Education Department; Putnam-Northern Westchester Board of Cooperative Educational Services; Yorktown Heights, NY 10598. (914) 962-2377.**

Developmental Funding: USOE BEH, State, and Local

JDRP No. 81-6 (6/29/81)
Recertified (9/26/85)

SKI*HI Outreach. A comprehensive program providing identification, hearing aid management, communication, auditory, and language facilitation through home management for hearing-handicapped children birth to age 6.

Audience Approved by JDRP for hearing-impaired infants and young children birth to age 6 and their families.

Description *SKI*HI* is a comprehensive program that provides screening, audiological, diagnostic and assessment services and a complete home intervention curriculum for hearing impaired children (birth to age 6) and their families. It provides a family-focused, team management approach.

The program is designed to provide services to a state-wide or large population area; however *SKI*HI* effectively meets the needs of regional, district, rural, small and private agencies. It includes a system for hospital screening for high-risk infants. A diagnostic and supportive entry process ensures efficient, expeditious entry of children and families into the program.

A complete home intervention curriculum is provided. It includes the main program areas of the Home Hearing Aid Program, the Home Communication Program, the Home Auditory Program, and the Home Total Communication and Home Aural/Oral Language Programs. Training in the *SKI*HI* model includes curriculum as well as areas of parent readiness, home visit planning, delivering and reporting, family emotional support and the role and characteristics of a Parent Advisor. Psychological, emotional, and child-development support are provided for parents in the home. Weekly and comprehensive quarterly assessment of child and family is performed. Part-time parent advisors living in the area visit homes weekly to deliver the curriculum, which is targeted for parents. A format for home visits is provided.

A support system of ongoing audiological services, a hearing aid evaluation and loaner system, video units and tapes for total communication, hearing aid molds, psychological services, parent group services, and a comprehensive evaluation system are provided. Careful planning for transition to the next educational environment is included.

A national data system collects yearly information on demographic status and child/parent progress for all participating adoption programs. Data summaries are provided to each program. These summaries allow the program to evaluate its own effectiveness with the families it serves as well as to compare its effectiveness with that of the total body of *SKI*HI* adopting programs across the country.

Requirements One full-time or part-time professional to make weekly home visits is the minimum requirement. This person must have basic *SKI*HI* training in delivery of a home intervention program for hearing-impaired infants. Travel is necessary. For maximum effect, a hearing aid bank, hearing screening, and audiological, psychological, and child development services should be provided. Earmolds, library books, video-playback units, and total communication tapes should be provided. In larger programs, supervision and administration are necessary. The program should participate in the SKI*HI data collection and evaluation system.

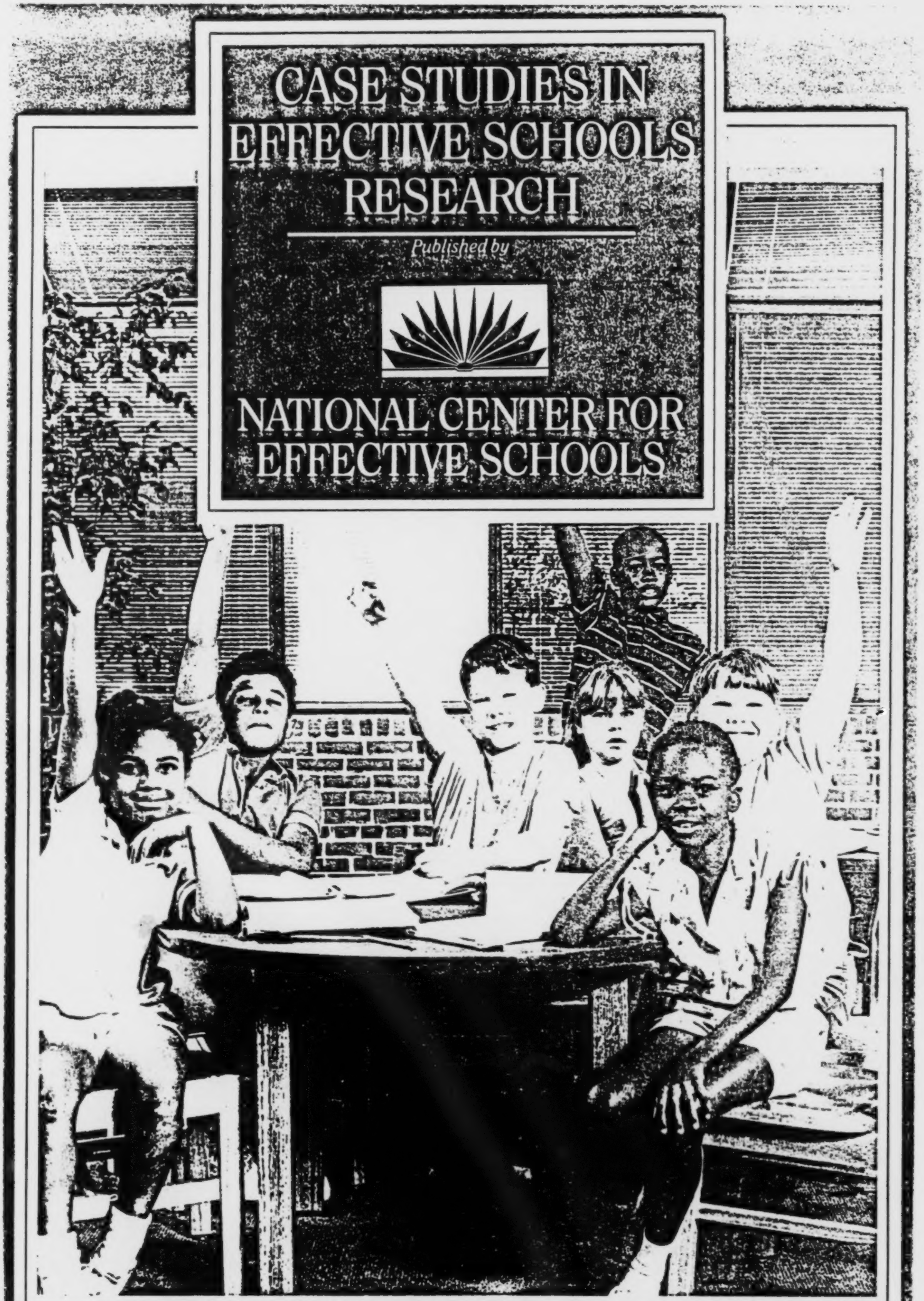
Costs Complete services for 11 months (including all direct and supportive services) costs approximately $1,549 per child. Start-up costs are minimal.

Services Awareness materials are available at no cost. Visitors are welcome by appointment at project site and additional demonstration sites in home state and out of state. Project staff is available to attend out-of-state awareness meetings (costs to be negotiated). Training is available at adopter sites (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

Contact **Thomas C. Clark, Director; SKI*HI Institute; Department of Communicative Disorders; Utah State University; Logan, UT 84322-1900. (801) 752-4601.**

Developmental Funding: USOE BEH

JDRP No. 78-192 (7/13/78)
Recertified (10/84)



CASE STUDIES IN EFFECTIVE SCHOOLS RESEARCH

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EFFECTIVE SCHOOLS

Introduction

Barbara O. Taylor, Ph.D.

The National Center for Effective Schools Research and Development takes pride in presenting these case studies of school improvement. Each report stands on its own and is written in the language of the authors as they report their story of school improvement based on the Effective Schools Research model. The editors endeavored to keep each district's rationale intact, trying hard not to change the words which capture the culture, traditions, and values that undergird the educational program of each district. These are, indeed, case studies in the practitioner's voice. These case studies carry good news about the difficult but rewarding work that is associated with school improvement.

For over a decade the people involved in school improvement programs in these districts have been experimenting with "what works." In some school systems, long before the more popular buzz words of "renewal," "empowerment," "restructuring," and "shared decision-making" were known, these educators were setting up **systems** that could **renew** schools, designing new organizational arrangements and reporting **structures** which would **empower** teachers by supporting them in their work with students, and participating in decision-making procedures which were collaborative and **shared.**

The language of the Effective Schools process for school improvement is now commonly used wherever school reform or renewal is attempted: stated and clear mission, instructional leadership, a school climate conducive for learning, high expectations for students and staff, student performance outcome measures, data-driven improvement planning. These phrases began with Effective Schools Research and are now the common language of school improvement today. Even **disaggregation of data** is now being legislated by some states in an effort to help districts to determine the distribution of subgroups of students' achievement scores, by socioeconomic status, race, ethnicity, and gender. The word **disaggregation** was used by early Effective Schools researchers to describe the process by which student outcomes, usually normed scores on standardized achievement tests, were broken into student subgroups and compared.

Of course, many school improvement components were developed outside of Effective Schools Research: time-on-task considerations, active-learning time, and academic press were all names of concepts formed to identify pedagogical concerns in the classroom having to do with student achievement. The synthesis of research on teaching and learning behaviors proposed in the principles of Madeline Hunter, Cooperative Learning, Teacher Expectations and Student Achievement processes, and Mastery Learning are all examples of programs which promote teacher effectiveness. These concepts continue to be developed simultaneously as Effective Schools Research evolves.

Effective schools and effective teaching are complementary literatures in the field, and they intersect at classroom management concepts. Although the instructional program is the primary *target* of Effective Schools Research (ESR) efforts, interesting questions *focus* on school and district policies, programs, procedures, and practices and their relationship to student performance. Effective Schools Research attempts to create a framework for addressing organizational, instructional, and institutional issues which are encountered as practitioners address and implement school improvement based *both* on quality in educational program and equity for all students in program and process.

Based upon the belief that "all children can learn," the Effective Schools model develops from a simple logic: If all students can learn, then we must structure school and district policies and procedures so that faculty are supported in their daily work of teaching all children. Specifying the locus of responsibility for student learning with the faculty, the Effective Schools model centers around organizational feedback systems such as the student academic monitoring system and school accountability systems, which inform the classroom teacher and the school principal about how well each of them is doing with regard to specific criteria.

In this process, the unit of change is the school building organization. The faculty and principal in each building form a decision-making team that frequently includes parent and support staff representatives. Each team is designed in accord with the culture of the school and the characteristics of the neighborhood or community the school serves.

Over time, school-based management (also called site-based management), a governing and planning structure for school improvement, has developed alongside the Effective Schools model. In the late seventies and early eighties school-based management and the Effective Schools model were combined in the minds of some practitioners in their efforts to place responsibility for decision-making for day-to-day activities in the hands of the principal and staff at the school site. But without a comprehensive model like the Effective Schools model, school-based management is only a governance structure, not a program for comprehensive school improvement. Educators who were advocating each of these models held the other implicitly in their minds: School-based management people were reorganizing decision-making so that more responsive program decisions could be made on behalf of students and their parents. Effective Schools model researchers advocated a framework which embraced a set of correlates, or characteristics of Effective Schools, which, once in place, would interact to begin the renewal process, as long as the organizational resources were redirected, the monitoring systems were in place, and the school staff was committed to the new belief system that "all kids can learn." Those focusing on school-based management had the "shared decision-making at the school site" part of the model. Those looking at Effective Schools had the "why" of school improvement: to reach and teach all children.

Design of the Present Group of Case Studies

In the spring of 1988, the National Center for Effective Schools Research & Development sent a survey form to personnel in sixteen districts and one educational resource center with whom the center personnel were working. This form was submitted to those districts which had worked faithfully and consistently over time to implement an evolving Effective Schools model. Some districts had been at work for over seven years (Jackson, Mississippi) while others had just begun. San Pasqual, a smaller district, was in the second year of implementation. Eleven of the districts and an educational resource center (the Middle Cities Association in Michigan) responded to the invitation to write their case studies, using a common form (see Appendix A & B). Over the summer the districts wrote reports of what had transpired based on their own observations.

Common Elements of the Comprehensive Model

The editors held two priorities: (1) to keep the case studies in the langauge of the authors and (2) to report the studies in a comprehensive yet comparable way (hence the need for a form for each district's reporting). The paramount attribute to be emphasized was the *comprehensiveness* of the Effective Schools model.

The model's capability for adaptation within the culture and norms of each school and district will become evident to the critical reader. However the reader should pay particular attention to a **number of elements** which comprise the model. These elements or components of the model are embedded in several common themes which run through the case studies:

- **Schools and districts which early on attempted to apply Effective Schools Research realized that they could do better, especially in reaching and teaching high-risk students in their instructional procedures and educational programs.** This primary motive for school improvement was instigated by the educational "accountability" movement of the seventies.

- **"Accountability" is encouraged on different levels and is a highly valued motive for change.** Pride and professionalism seem to promote the belief that school people can perform their roles to certain agreed-upon standards, and can be held accountable for that performance:
  - the schools are accountable to the community and parents;
  - the board of education to the citizens of the community;
  - the superintendent to the board and the community;
  - the principals to the superintendent and the community the school serves;
  - the teachers in a school to the principal;
  - the students to the teacher;
  - the support staff to the principal, teachers, and central office administrators.

  Accountability demands that goals be defined, that a district mission be stated as well as school missions, and that the work and policies in the district be consistent with the district mission. Evaluation processes proceed from these agreed-upon goals and evaluation measures decided upon by district consensus, as well as by federal, state, or local law.

  By agreeing upon a mission, the people in a district pull together. The mission then acts like a rudder on a ship: it gives direction and stability to what otherwise would be a jagged course, depending upon prevailing winds and ocean currents. Accountability in this way promotes cohesion, a sense of "what we are about," and cuts down on counterproductive or diverse efforts. Accountability for an agreed-upon goal lessens political infighting among various outside and internal special interest groups.

  Finally, by stating district and school missions and operationalizing them with realistic goals and objectives, the organizations involved plan for "organized abandonment" of counterproductive policies and procedures. There will be more realistic annual plans written once they are operationalized, and each year prudence will dictate only two or three major goals be attempted. The stated mission should assure that these goals are consistent with one another as well as with the mission.

- **School improvement leaders recognized that small incremental changes or adjustments in teaching techniques are not the answer, in and of themselves.** Changes in the classroom procedures and activities are necessary but not sufficient for beneficial and lasting change. Practitioners who started with pedagogical adjustments in classroom techniques soon learned that school and district policy and procedures often prevented implementation of new teaching innovations. Certainly those teachers "going it alone," unless they were experienced and exceptionally talented, were not able to sustain their efforts over time. This is especially the case with regard to the coordination and coverage of subject matter and teaching objectives from one level to the next.

- **Education leaders who saw a need for change were hesitant about how to start the Effective Schools Research improvement process.** Team building, training in group dynamics, communication skills, and skills of planning are necessary training areas for teachers and principals so they can conduct day-to-day decision-making at the school site. Most school teams and school faculties decided to develop these skills by working on a specific school project such as implementing a school-wide discipline code. Projects such as these provide a beginning and a foundation for school improvement.

- **Those who plan improvements need appropriate, ongoing dialogue about staff development which links each school with central office staff or the superintendent's office.** The importance of up-to-date training for principals, teachers, support staff, superintendents, and the board of education cannot be overemphasized. New ways of carrying out ESR are constantly being discovered. Barriers to school improvement, which usually center around the belief system and the reallocation of resources in target areas, are being addressed successfully across the country.

- **Finding time to meet, to plan, and to oversee the implementation of the Effective Schools process is one of the most difficult tasks practitioners undertake.** Most of the added resources needed (and most districts feel that little new money is required once the staff development program is adequately funded) are needed in this area, in terms of released time. Also, certain official "waiving" of parts of the teacher contract for a specified period of time, and according to the rules of the teacher's association, needs to be negotiated.

- **Effective planned change requires a central system that monitors student progress and reports to teachers and principals in an accurate and timely fashion.** Deciding what student outcomes to measure, and how to measure them for decision-making and planning purposes at the school site level, is not an easy task. The process of disaggregating data demands sophisticated interpretation, and the reporting of these data to internal and external constituencies is a sensitive issue. Such a system needs to document student scores and give fast and accurate feed-back to teachers for reteaching. Because these structures have been difficult to design, and because the amount and kind of testing best suited for teaching for learning for all varies across districts, regions, and even countries, student monitoring is often put on the back burner until other assessment questions (like teacher evaluation) are settled. The student monitoring system should be held separate from the teacher evaluation system, as far as employment questions are concerned. The student monitoring system is part of the teacher conferencing system, and for the use of the principal and teacher to improve instruction in the classroom.

- **As early in the process as possible, teachers and other personnel need to align curriculum and develop criterion-referenced tests which measure mastery.** For most teachers, knowing that their students will be tested on the topics and objectives that are being taught takes much of the uncertainty out of relying on standardized achievement test scores. Curricular alignment is also the first step in preparing criterion-referenced tests for the district, so that teachers using these tests can cover subjects adequately and know that all children are keeping up to date.

- **"Quality" and "equity" must be defined and their measures specified.** Definitions clear up misunderstandings about goals and objectives. Effective Schools advocates are aware of the role public perception plays in assuring success, both within the school system and in the community it serves. Good public relations gives pride in accomplishment, to the people achieving, and to the community reaping the rewards of their endeavors. Early in the process, indicators of school improvement (see Appendix C, page 215) should be decided upon by the school board and the district planning team. These indicators should be used to make decisions internally. Certain indicators should be reported regularly to the community.

- **The "correlates" of Effective Schools Research are a means to an end, and not an end in themselves.** One of the best indicators of a good understanding of Effective Schools Research is when a practitioner or researcher realizes that the correlates are characteristics of effective schools, not the goals of the Effective Schools process. The goal is to design district and school policies and procedures so that they support the classroom teacher in his or her effort to teach for the learning of all students.

- **Leadership on the part of the superintendent, principals, teachers, and outside consultants is an essential part of the process of school reform and renewal.** Because the process of change does not take place overnight, or even in a year or two, practitioners must have the determination to see things through when they get bogged down. The model is specific enough to point to the areas of concern; the people responsible for implementation must make their own decisions and be innovative in finding solutions to the problems they encounter. Commitment, enterprise, and persistence are especially crucial in large school districts, where organizational momentum can be slowed easily, in some cases without warning, when internal or external political questions remain unresolved. Internally there is always the possibility that the school improvement process will become the target of unrest within the ranks of teachers, principals, or support staff associations. Usually, the key question to be resolved centers on the traditional bargaining arenas of working conditions, salary, and fringe benefits and not the school improvement program. It is important to separate the issues early on in negotiations and keep the improvement process moving.

The case studies should be read, then, with a focus on pragmatism. The threads running through these reports are dynamic, often a product of mutual causations in the district.[1] (A good example of mutual causations is the development of "high expectations." This belief on the part of teachers in part proceeds from *experiencing* higher student achievement and in part *fosters* higher student achievement.) Phenomena which result from mutual causation are hard to research. So is a non-linear process of development, which the Effective Schools Research process of school improvement most certainly is: iterative at every step. Involving many complex, interlocking decisions, and many actions on the part of various persons, the model makes sequential analysis difficult, and predictive and explanatory analysis almost impossible.

To understand better what seems to be confusion, a new philosophical underpinning is needed. In his book, *After Virtue,* Alisdair McIntyre describes the essence of a good leader in reorganizing for a specific goal:

> Clearly his first step would have to be the creation of an organization to provide an instrument for his project and equally clearly his first task would have to be to render the activity of his own organization wholly or largely unpredictable. For if he were unable to achieve this, he could scarcely achieve his larger goal. But he would also have to render his organization efficient and effective, capable of dealing with its highly original task and of surviving in the very environment which it is committed to changing. *Unfortunately these two characteristics, total or near total predictability on the one hand and organizational effectiveness on the other, turn out on the basis of the best empirical studies we have to be incompatible* (italics added). Defining the conditions of effectiveness in an environment that requires innovative adaptation Tom Burns has listed such characteristics as 'continual redefinition of individual task,' 'communication which consists of information and advice rather than instructions and decisions,' 'knowledge may be located anywhere in the network' and so on (Burns 1963, and Burns and Stalker 1968). *One can safely generalize what Burns and Stalker say about the need to allow for individual initiative, a flexible response to changes in knowledge, the multiplication of centers of problem-solving and decision-making as adding up to the thesis that an effective organization has to be able to tolerate a high degree of unpredictability within itself* (italics added). Other studies confirm this. Attempts to monitor what every subordinate is doing all the time tend to be counterproductive; attempts to make the activity of others predictable necessarily routinize, suppress intelligence and flexibility and turn the energies of subordinates to frustrating the projects of at least some of their superiors (Kaufman 1973, and see also Burns and Stalker on the effects of attempts to subvert and circumvent managerial hierarchies).
>
> Since organizational success and organizational predictability exclude one another, the project of creating a wholly or largely predictable organization committed to creating a wholly or largely predictable society is doomed and doomed by the facts about social life (pp. 105–106).

The Effective Schools Research model is a process, a framework for decision-making by educators who would make their schools places of learning for all students. These case studies illustrate common practices, describe the more pervasive program barriers and opportunities encountered, and show that increased staff and student morale can come from shared decision-making in a collaborative enterprise that owns regular success.

This model is descriptive, not predictive, except for a list of the general types of work to be done by the people involved. The outcomes of that work are politically and socially different for each district and each school. The outcomes are related to an increase in higher academic achievement for all students. Further systematic research is needed to substantiate these findings.

However, the lessons we have learned from this pragmatic knowledge-base are important and useful. Dr. Lezotte's summary chapter weaves the threads together in a descriptive and explanatory text which adds to our understanding of the Effective Schools model and its application in a variety of districts.

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[1] See Lincoln and Guba (1985), *Naturalistic Inquiry* (Beverly Hills: Sage Publications), pp. 150–157. The authors' discussion of "mutual simultaneous shaping" is worthy of study by practitioners and researchers alike.

The National Center for Effective Schools Research and Development thanks all the authors of the case studies, their boards of education and superintendents for allowing the case studies to be written and published. The degree of forthrightness demonstrated by their candid contributions to the field of education reflects the openness of the districts involved and their commitment to the Effective Schools process for school improvement.

Barbara O. Taylor, Ph.D.

Mishawaka Moves to Improve

R. Steven Mills
Assistant Superintendent
School City of Mishawaka

Mishawaka School District

Became involved in Effective Schools process in 1985

Community

Population
40,000

East of South Bend, Indiana in the northern part of St. Joseph County; the economy is based on services and industry; major employers include Uniroyal, Miles Laboratories, Nyloncraft, and Liberty Mutual Life Insurance.

About 22 percent of all students receive free-and-reduced price lunches; half the mothers attended college.

School District

Enrollment
5,300

Ethnic Composition (percent)

Caucasian	97

Per Pupil Expenditure

1987–1988	$2,420

Percent bussed
0 (neighborhood schools)

Area (in square miles)
8.5

Schools

Elementary schools	8
Junior high schools	2
High school	1

Number of Staff

Administrators	35
Certified teachers	292.5
Support staff	181

Student-Teacher Ratio

Elementary	15.3:1
Junior high	18.7:1
High school	17.8:1

Percent college-bound
30

Abstract

The School City of Mishawaka's case study delineates specific steps taken, the sequence of these steps, and the general reactions of constituent groups. The SWEAT (System-wide Effective Action Team) is the primary district coordinating vehicle for the school improvement program. From their deliberations an orderly planning process fans out to building-level teams (BLTs). Building plans are "reviewed, revised, and approved" in the schools before they are submitted to the board of education for final approval. The plans, three-year projections, are updated every year.

Because the Effective Schools process for school improvement has been in effect only one year (1987–88), achievement scores have not measurably increased. The district switched from the Iowa Test of Basic Skills to the California Achievement Test in the spring of 1988) and so new base-line data have been gathered. Disaggregation of student scores along socioeconomic status categories has been performed since the beginning of the program. Because tests are given only at the third, sixth, eighth, and tenth grade levels, and there are no district-wide criterion-referenced tests, Mishawaka's student monitoring system is not yet developed enough to be useful for school improvement based on Effective Schools Research.

However this is one of the best cases in this monograph to demonstrate the complexity of "starting-up" procedures. Quotations from a personnel questionnaire bring alive the personal and professional concerns of staff, central office administrators, and principals.

An extensive Appendix to this case study is an example of a truly comprehensive approach to school improvement based on Effective Schools Research. Mishawaka was fortunate to begin their process when more was known about the importance of strong supportive district relationships with schools. Some of the forerunners, like Jackson, Mississippi; Norfolk, Virginia; Spencerport, New York; and others cited in this monograph had already designed reporting systems, and other feed-back and coordinating structures to carry the school improvement process forward. Mishawaka is a good example of what works when leadership, commitment, and quality staff development programs are added to the fundamental Effective Schools Research model.

The City of Mishawaka

Mishawaka, a city of approximately 40,000 people, is located just east of South Bend in the northern part of St. Joseph County, Indiana. Mishawaka's economy is based on services and industry. Major employers include Uniroyal, Inc., Nyloncraft, Liberty Mutual Insurance Company, Miles Laboratories, Inc., School City of Mishawaka, and Civil City of Mishawaka. Currently the community is "shifting" from a highly industrial base to a service-based economy.

School City of Mishawaka (SCM) covers 8.5 square miles and serves 85 percent of its resident children. The remaining children attend school in neighboring districts and parochial schools. The Mishawaka Municipal Common Council appoints a five-member board of school trustees to govern the school district. Operating funds come from state support (approximately 50 percent), local taxes (approximately 45 percent) and other sources (approximately 5 percent). The local school tax level is $5.81 per $100.00 of assessed valuation. The annual expenditure per student in 1987–88 was $2,420.

Over 5,300 students attend the eight elementary schools (grades K–6), two junior highs (grades 7–8), and one senior high school (9–12) within the Mishawaka School Corporation. The system is staffed by 34 administrators, 318 teachers, and 142 support staff. Pupil-teacher ratios average 20–1 and are unsurpassed by most public schools in the area. Great pride is taken in maintaining facilities in such a way as to provide a safe and orderly school climate conducive to teaching and learning. The Mishawaka Administrative Center houses the business and instructional administrative offices, the Hannah Lindahl Children's Museum, and the "Survive Alive House" (fire safety program).

The corporation's commitment to the "neighborhood school concept" encourages personal contact between parents and school personnel. This close relationship permits ongoing communication and close supervision of each child's school-related activities through the Mishawaka system. Elementary students reside within walking distance of the school they attend. Transportation is provided only for special education students who need programs outside their normal attendance areas.

The following statistics describe the student population:

	Percent
Socioeconomic status	
Single parent homes	23.7
Mothers with less than high school degree	21.0
Mothers with college education	50.78
Free lunch program	16.50
Reduced lunch program	5.44
Ethnic background	
White	97.03
Black	.97
Hispanic	.875
Asian	.746
Other backgrounds	.136
Language spoken in home	
Only English	98.95
Second languages	.796
Non-English	.220

Motivation for Launching the Effective Schools Process

In June of 1985, at the invitation of the superintendent of a neighboring school district, the entire administrative staff and teacher association leaders of the Mishawaka schools, along with like members of the neighboring district, participated in an intensive two-day workshop on Effective Schools Research. As a result of this persuasive, logical approach, the Mishawaka district decided to study and review the entire instructional program during the 1985–86 school year.

Although the over-all consensus was that the school district had an admirable "track record" of educating the youth of Mishawaka, participants in the workshop concluded that the implementation of the Effective Schools process should be encouraged.

- Certain practices have been proven to be more effective than others in the teaching and learning process. School leaders wanted to be certain that these proven practices were being followed in every classroom.
- The socio-economic status of Mishawaka students is changing. The challenges of negative societal factors needed to be addressed with new, proven practices and procedures.
- The dynamic nature of education itself mandates the need for constant efforts to improve.
- Self-renewal efforts in purposeful cycles must be implemented for schools to continue to be successful and effective.
- Citizens and legislators are demanding public school improvement and accountability.

A History of Launching SCM's Programs

School City's commitment to a process of school improvement based on Effective Schools Research

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began in June of 1985, when administrators from the school corporation attended two Effective Schools workshops. On August 26, 1985, the entire staff attended a meeting at which Superintendent Richard Brainerd presented the Effective Schools model for improving the quality of education for all students in the Mishawaka School System.

From November 1985 until April 1986, teams of administrators and teachers presented the correlates of Effective Schools to every instructional staff member in the school corporation. During this time, administrators and selected teachers attended institutes presented by researchers and practitioners of Effective Schools Research. On May 5 and 6, 1986, Lawrence Lezotte met with administrators and selected teachers from each school in the system to provide suggestions and to outline actions to start the Effective Schools process.

June 10, 1986, the board of school trustees directed the administration to prepare a district plan for proceeding with the Effective Schools process. During June and July 1986, administrators and teachers developed a three-year plan. In August the board gave its approval. During this time, staff members attended a variety of workshops which related to skills needed to implement the plan. (See Appendix to this Case Study.)

The Key Leaders . . . "SWEAT"

Dr. Lezotte met with the entire staff on October 29, 1986 to share his expertise on the Effective Schools process to all 494 employees. That afternoon all employees completed a survey that was designed to help identify both strengths and areas needing strengthening in Mishawaka schools.

In December 1986, the System-wide Effective Action Team (SWEAT) was formed. Led by Assistant Superintendent Steve Mills, this team of representatives (principals and teachers) from each of the ten schools were given specific tasks to take back to their buildings.

The assistant superintendent for personnel; the assistant superintendent for curriculum evaluation and secondary education; the directors of gifted and talented programs, computer education, the joint services of health, physical education, and safety; and the school psychologist made up the representatives from the district office. The Mishawaka Educational Association president, Bruce Shannon, was also a member of the SWEAT team.

March 27, 1987 marked the culmination of one and one-half years of research, study, and preparatory work. On that day, the entire school corporation staff met in their individual buildings for "Staff Development Day." During these meetings, each school discussed the preliminary draft for school improvement, and the response was overwhelmingly enthusiastic.

At each building, a building-level team (BLT) was formed, composed of the building's SWEAT representative, a central office administrator, the school principal, and both certified and support staff members. Each school-level team wrote, then reviewed, revised, and approved a final written school improvement plan for its individual school. These plans were submitted to the school board on June 9 and 11, 1987, and were approved at the June 23, 1987 meeting of the board.

In September 1987, all schools selected community representatives to serve on their building-level teams. These representatives included school parents, business leaders, and senior citizens.

SWEAT-ers met one day a month during the school year; teacher reps were given release-time for that day. The building-level teams met at least once a month, generally prior to the SWEAT meeting. While most of the original SWEAT will be back for the 1988–89 school year, several chose to name replacements chosen from those teachers attending the last two meetings of the SWEAT. The high school requested additional teacher representatives, so that they now have three teachers on the 1988–89 team.

Individual School Teams

Each school has a building-level team composed of the school principal, the SWEAT representative from the building, a central office administrator, various teaching support staff members and representatives from the community. Every building has a three-year plan, which is updated yearly.

Funding the Process

Funding required to meet the goals established by all schools for the 1987–88 school year required a $43,000 appropriation by the school board. A budget of approximately $40,000 to fund the projects for the 1988–89 school year is expected to be approved by the school board.

Sources of Program Support

The board allocated monies from the general fund and uses state funds to support school improvements. Indiana's "A+ Program" has many provisions which support some of the Effective Schools projects. A $12,000 Teacher Quality Grant from the state will provide 22 teachers with Essential Elements of Instruction training this summer. A Phi Delta Kappa

Teacher Training Grant provided for two teachers to undergo similar training.

Symbolically, the board and superintendent have made the Effective Schools process an obvious "Number One" priority. The board has called special meetings to hear from all building-level teams. The board has approved system-wide guidelines for policies submitted by the SWEAT. At these meetings, the board expressed delight in the progress being made. For the first time ever, the district held a "Teacher Recognition" Banquet on May 23, 1988. Every board member and all SCM administrators were present to congratulate and recognize the system's teachers. Prior to the banquet, the board proclaimed a "Teacher Recognition Day." Superintendent Brainerd went to every school on that day and personally presented every teacher with an enameled apple pin with "I made the difference" engraved on it.

Numerous staff development inservices were held at each building and system-wide during the year. The chances for personal-professional development were supported at every level. A teacher mentor program was officially launched at the end of the school year, with 26 volunteers responding.

Measured Student Outcomes

At this juncture, School City of Mishawaka can provide no hard evidence that schools are improving. During the 1986–87 school year, all schools in the district used a disaggregated analysis of student scores in reading and mathematics on the Iowa Test of Basic Skills to establish baseline data for use with the building-level needs assessments. Students were categorized for this purpose based on the educational level of the mother. Three test score categories (students whose mothers had not graduated from high school, students whose mothers had a high school diploma, and students whose mothers had a college degree) were established for this purpose. Student scores were plotted graphically so that the three categories of students could be compared for equity and achievement at the 40th and 80th percentiles of achievement. A great shortcoming of this process, beyond the fact that the district was not using criterion-referenced testing, was that the district had tested children only at the third, sixth, eighth, and tenth grade levels, thus making it impossible to follow the progress of specific students continuously from one grade to the next.

During the spring of 1987–88, School City of Mishawaka changed from the Iowa Test of Basic Skills to the California Achievement Test, and is now testing at all grade levels annually. Currently the system is in the process of performing a disaggregated analysis of these test results to once again establish a baseline for measuring improvement. This process will be conducted yearly and will form a basis for measuring growth in student achievement.

Documented Changes Related to the Correlates

Since the implementation of School City's Effective Schools program is only one year old, documented facts and figures are not available at this time. Responses to a survey given to teacher, central office administrator, and principal representatives on the System-Wide Effective Action Team are condensed here.

Teachers: Improved communication within and among school buildings has contributed positively to almost every Effective Schools correlate. A system-wide grading scale, retention policy, and homework policy have made a statement to the school community and the community at large as to what we want to accomplish with the students in our schools.

Administrators: People are not beginning to equate or relate test scores to instruction and ultimately to teacher behaviors.

Principals: The strength and presence of the correlates of Effective Schools are documented in a system-wide assessment, training for principals in instructional areas, school and system mission statements, the existence of collected demographic data in all our schools, an awareness of SES groups and related student achievement, and the functioning task committees and building-level teams at each school.

Other Organizational or Personnel-Related Improvement Data

Teachers: Broad-based decision-making has resulted in decisions that reflect staff feelings and ideas. The availability of programs to improve instruction have improved skills and teacher self-concept. Enthusiasm is visible in school buildings. Teachers are talking about improved schools resulting from changes initiated by needs identified by staff members.

Administrators: Needs have been assessed. Plans are in place for improvement. People are actively thinking about how to get better.

Principals: Increased communication among staff; increased awareness of effective instruction; increased awareness of the value of current research . . . the Effective Schools process provides the structure for change Inservice sessions devoted to building-level concerns . . . gym schedules built around instructional needs! A shift from climate to personal improvement and development.

Battell School principal Dan Wilson uses words like "excellent" and "very important" when he describes what has been doing on at Battell School since last January. "When BEAT, the Battell Effective Action Team, first met to discuss the steps our total school staff should take to prepare for a three-year plan for school improvement, there was some skepticism as to whether such a monumental task could be accomplished," stated Wilson. "But," he continued, "as the process evolved, it was met with a lot of excitement and enthusiasm when results from the individual study groups started to form." The total staff at Battell School spent months gathering data, studying the results of a school survey, and learning what Effective Schools Research had to offer.

Professional and General Staff Development Programs

Staff development programs are seen in a more positive light since the implementation of the Effective Schools program. Since many of the programs are building-based, the contents of the programs meet the needs and interests of the staff and students much better than previous efforts. Current development programs are geared more to the improvement of instruction than in the past.

The 1987–88 Young Junior High School Staff Inservice Calendar was as follows:

August 24, 1987	Effective Schools Agenda and Computer Training
October 13, 1987	Inservice on Middle School Concepts
November 10, 1987	Inservice on Test Construction
December 9, 1987	Follow-up on Test Construction
December 14, 1987	Inservice on Creativity and Motivational Thinking
January 6–7, 1988	Great Book Northern Indiana Regional Workshop
January 15, 1988	Inservice on Interdisciplinary Teams and Middle School Conference Sharing
February 2, 3, 4, and March 29, 30, 31, 1988	Staff Writing Workshops
February 5, 1988	MGAP and CSPAN News Access Presentations
March 14, 1988	Dr. Joel Milgram, Inservice on Understanding Transescents

Currently, a system-wide staff development program based on Effective Schools Research is being compiled. Specific components include:

Teachers: Staff development programs have improved; they are more useful in regard to more effective instruction. Attendance at other programs is also encouraged. Staff morale has improved. Changes have resulted or will result from needs as they are identified by staff.

Administrators: Staff development is much more focused now; the Effective Schools process provides a basis for making staff development plans—not just whatever comes along.

Principals: Staff development now centers on building-identified needs and has a specific purpose. The focus on improving the schools has provided structure for identifying needs; this same structure will provide direction for years to come. Efforts are more focused now. The clearer focus created by this process has allowed the staff to also maintain that clear mission.

Curriculum

Teachers: Specific statements and objectives make curriculum easier to implement and tell exactly what is expected. Changes are taking place in response to needs identified by teachers.

Administrators: People understand the need and concept of a unified curriculum that teaches what we test and vice versa.

Principals: The curriculum model is in place. One principal, who is co-chairing School City's reading adoption committee says that this year's committee is unlike any previous adoption committees. First, they began their search for a text by developing a statement of direction. The committee is functioning much like the building-level teams. They have also used outside consultants to give two-day inservice workshops on selecting a reading textbook.

Program Implementation

Teachers: Timelines and guidelines tie all schools together. Teachers are able to attend programs and inservice sessions designed to improve instruction. Involving staff members in planning for decision-making has decentralized the implementation of programs that needed change. Leadership is spread throughout the system's schools.

Principals: The presence of the "Essential Elements of Instruction" inservice programs for administrators, principals, and staff.

Program Evaluation

Teachers: System-Wide Effective Action Teams bring viewpoints from the schools to the administration. This increases the amount of staff input; it is more representative of total staff views.

Principals: Program evaluation is now a part of the curriculum model. It provides a systematic way to use test data that will be used to measure any progress.

Staff Evaluation

Principals: Stresses helpful suggestions to make each instructor more valuable to students. Avoids criticisms that destroy teacher self-concept. Has provided for increased awareness of the need for change in our present system. TESA and Essential Elements of Instruction inservice sessions, together with other workshops designed for principals in the area of staff evaluation, have made them feel much more comfortable with the process.

Historically, personnel evaluation has been used in our system as a means of determining whether or not an employee remained an employee of our school system. As a result of the Effective Schools program, evaluation has become much more of a formative process between the employee and the administrator. All administrators within the school system have received and are continuing to receive training in the areas of the essential elements of instruction and the formative evaluation process. All staff members are to be observed annually and pre and post conferences will be held between the staff member and the administrator to mutually determine areas of growth. This process, along with the results of the building-level needs assessments and subsequent staff development plans for each building, are being utilized to strengthen the instructional skills of both administrators and teaching staff.

Community Attitudes

Teachers: Publicity and public relations efforts have increased awareness of what makes schools effective. Building teams have included community representatives to foster this involvement and to communicate results.

Administrators: The community is much more aware of the instruction-related activities in the schools since the introduction of the Effective Schools program.

Principals: Introduction of a weekly parent visitation program; improving of community attitudes since we are publicizing more instruction-related items. Parent interest and involvement in the schools has increased dramatically.

Service and Funding Agencies

Teachers: Many sources are available that were unknown to us before. Suggestions on funding are now networked among schools through the System-Wide Effective Action Team; many good ideas are generated.

Recognition of the Instructional Process

Teachers: Staff members are asking for information instead of being told that they need to increase skills and knowledge. "Their" school corporation has become "our" school corporation.

Principals: Emphasis put on instruction has never been greater, and has a very positive effect. Introduction of Essential Elements of Instruction inservice training and the annual teacher recognition program reinforces this.

Disaggregated Data

Student test data from the system's norm-referenced testing is currently being disaggregated and used to check for equity and excellence in achievement. This is being done on a grade-by-grade basis in the areas of reading and mathematics. The 40th and 80th percentiles have been established as cut-off points for this purpose. Student test scores in these areas will be disaggregated, analyzed, and graphed on an annual basis to measure equity and growth.

Development of Curriculum-Based Testing/Criterion-Reference Tests

A total revision of the student curriculum is underway within the school system so that the total curriculum will be stated in outcome-based terms. This alignment has been accomplished in the areas of science and mathematics at the elementary level. The reading curriculum will soon be completed. At the secondary level, this has been accomplished in all areas. The goal is to establish criterion-referenced testing at all grade levels in all curricular areas.

Development of Policies and Procedures at District and School Level

A system-wide homework and promotion-retention policy have been written by SWEAT and approved by the board of education. Individual schools will then set their own policies using the system-wide policies as a guide.

Teachers believe that this system-wide approach has established a vehicle for developing school-based procedures. Building-level teams and faculties develop written building procedures regarding routine matters, supplies, discipline, referrals, and scheduling. Regular team meetings help facilitate this process.

Instructional and classroom practices are changing because teachers recognize the opportunity for making suggestions and seeing them discussed. Practices "that work" can become systematized and coordinated rather than "shotgun" and this change pleases administrators.

It was important to take the first two years for district and school staff orientation, awareness, and planning (1985–86, 1986–87). During the planning year, too many deadlines were set, however, and frequent meetings led many school staffs to feel "harried" by June (1987). One teacher remarked,

> I would not be in such a hurry to try to do everything in year one! I think the anxiousness showed. It would be good to begin the first-year needs assessment and evaluation of findings earlier in the school year in order to spread the tasks over a longer time frame.

Principals agreed that decentralization made the central office more aware of the many budget decisions that can best be made at the building level. However, district restrictions in the first-year plan did not allow the building to complete plans for the many (too many) areas identified for attention. They agreed with their teachers it was better to concentrate on one or two important areas than try to do everything at once.

Administrators regretted not getting involved in the process early on. One district staff member remarked, "It is the most exciting and rewarding educational experience of my 24 years in education." Administrators also felt a different needs assessment survey and procedure should be used. They would have made curriculum alignment an important priority from the beginning.

Summary

During the 1988–89 school year, School City of Mishawaka will be entering into its second full year of operation utilizing system-wide and building-level school improvement plans based on Effective Schools Research, as its vision and guide in a quest for excellence. Those affiliated with the corporation sincerely desire to provide Mishawaka students with a quality and equitable education which will offer them more choices and opportunities when they graduate from Mishawaka High School.

Many things vital to the continuing educational growth of our school system have been accomplished during the past three years. These accomplishments have been outlined in previous sections. Many areas remain to be addressed before our schools can truly qualify as "effective" schools, including valid measurement of our progress. Most importantly, however, we have taken the first step, in committing ourselves to excellence. We have even taken the second step by putting that commitment into an organized plan for achieving excellence. In the third step, we actually began implementation of that plan. We are a vital, healthy, enthusiastic corporation; Mishawaka is an exciting place to be . . . with "miles to go, before we sleep."

APPENDIX TO MISHAWAKA CASE STUDY

EFFECTIVE SCHOOLS: The Mishawaka Plan, August, 1986

School City of Mishawaka Board of School Trustees

Emery S. Petko, President
Dale E. Emmons, Vice President
Marilyn J. Schroyer, Secretary
Virginia H. Currey, Member
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Richard L. Brainerd, Superintendent

School Improvement Planning Committee

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R. Steven Mills
Dr. M. Kay Novotny
Norma Pangrac
Jerry Seese
Robert D. Smith
Doris Speicher
Steve VanBruaene
Pamela von Rahl

Introduction

This plan for school improvement in the School City of Mishawaka, based on Effective Schools Research, was developed by a steering committee composed of central office administrators, building-level teachers, and principals. Each received extensive training through study and exposure to nationally recognized researchers and practitioners of the effective schools' model. It was approved and adopted by the Mishawaka Board of School Trustees on August 19, 1988, for implementation in all schools of the district.

The plan is based on belief in and value of the merits of Effective Schools practices and theories. If implemented, the plan will cause significant and measurable improvement in the Mishawaka schools. The steering committee believes that improvement centered at each building level with support from the district level is essential. The employees in each school are quite capable, and will accept the responsibility for improvement both in quality and equity in all areas of school programs. Therefore, the committee believes the district has the people and resources required to successfully implement this project.

The plan is directed to professional staff at the building level as to broad guidelines, expectations, and actions over the next three school years—1986–87, 1987–88, and 1988–89. It is intended to be purposeful, reasonable, and attainable. Materials for communicating with support staff, students, patrons, and the community as to their involvement in school improvement will be developed.

Information and data based on research, experience, or practice are presented in the following areas in order to support the plan ingredients, and to give direction to those implementing the plan:

- Background on Mishawaka
- Why School Improvement is Necessary
- What is Known about School Improvement
- Characteristics of Effective Schools
- Definition of an Effective School
- Mission of the Mishawaka Schools

The three-year plan is intended to be broad and general. It is expected that revision and updating will occur each year.

1985–86 Background on Effective Schools Research and School Improvement in Mishawaka

In June of 1985, at the invitation of the superintendent of a neighboring school district, the entire administrative staff of the Mishawaka schools, along with like members of the neighboring district, participated in an intensive two-day workshop on Effective Schools. Also, teacher association leaders from each school system were participants. The content of the workshop was based on research of the late Ron Edmonds, a pioneer in effective schools research, as to the characteristics of effective schools and the school improvement process. It was decided that this persuasive, logical approach was worthy of study and review by the entire instructional staff during the 1985–86 school year.

Subsequently, teams of teachers and administrators prepared and presented five two-hour sessions on the subject to the professional staff over the course of the year. One of Edmond's five "correlates," or characteristics, was reviewed, described, and analyzed during each session. The process of school improvement based on effective schools' research and practices was stressed to develop awareness, understanding, and interest of the staff. At the same time, extensive research on the concepts, beliefs, and values of effective schools was accomplished by the members of each presentation team. Each staff member received descriptive materials throughout the year for staff review, including the Effective School Report, a publication of the Kelwynn Group.

The System-wide Instructional Improvement Council met five times throughout the year to discuss the correlates and the improvement process. In order to further familiarize key leaders with the effective schools improvement model, ten administrators and two teachers also attended institutes presented by researchers and practitioners describing successful implementation practices and significant data.

All these efforts were intended to initiate, train, and commit Mishawaka instructional staff to school improvement based on Effective Schools Research. Substantial numbers of teachers and administrators have expressed strong interest and desire to proceed with implementation processes.

With this as an objective, Dr. Lawrence Lezotte, a nationally recognized leader in the Effective Schools movement and associate of Ron Edmonds, met with all administrators and selected teachers from each building on May 5 and 6, 1986. Dr. Lezotte provided valuable insights and suggestions, and outlined possible actions to start the process, for implementation of a school improvement project in all the Mishawaka schools.

Finally, on June 10, 1986, the board of school trustees determined that an effective schools project would have merit for the school corporation, and directed the administration to prepare a district plan for proceeding with such practices and concepts in all schools. This is that district plan.

DISTRICT PLAN FOR MISHAWAKA SCHOOLS
Why School Improvement Is Necessary

The schools in Mishawaka have a long standing reputation and tradition of strong educational programs. Intense community pride is readily apparent to visitors and newcomers in the city. This pride stems, in part, from the stability and success of school programs. Conditions and characteristics now exist that are usually associated with quality schools. Citizens in the area, and particularly in the Mishawaka community, have been supportive of good schooling and have expected delivery of positive programs in their public schools. The Mishawaka schools experience active parental involvement, experience low turnover of certified and classified personnel, have strong building-level administrators, practice collaborative and collegial decision-making, and are financially sound, but not wealthy. Most importantly, most students generally express interest in learning, and demonstrate reasonable behavior and attitudes. In fact, those with contact in other districts as well as Mishawaka schools—parents and pupils who have transferred into the district, substitute teachers, and those in higher education—testify to the quality, atmosphere, and offerings in Mishawaka schools. The synergistic effect of these positive factors has developed a sense of confidence on the part of the community in operation of the schools. The questions logically might be asked: Why is there interest or need to embark on an effective schools/school improvement project? With such a heritage and seeming indicators of success, if things aren't broken, why fix them? Do we have to be sick to get better?

There are several answers to such queries:

1. A growing body of research and current literature strongly indicates a general consensus is emerging about the elements of effective schooling. Certain practices are more effective than others in the teaching and learning process, and should be sought in classrooms, in schools, and in school districts. Hundreds of schools across the nation have successfully instituted such practices. Although the Mishawaka schools incorporate many of these practices now, others may be lacking.
2. Although most Mishawaka youngsters have positive attitudes and behaviors and achieve well over national standards, increasing numbers do not. The impact of negative societal factors, drugs and alcohol, lack of interest and motivation, poor basic skills, poor achievement, assertions that school is boring—all are factors that challenge schools to do something different or something better. Attempts to overcome these factors have met with limited success. If we continue to do the same things, it's reasonable to assume that we'll get the same results. Thus, we may need to abandon some practices and procedures, as well as change others.
3. Organizations are dynamic, not static, and thus, the assumption is made that schools either decline or improve in their attempts to adapt to societal and organizational changes—there is no constant state. Our schools should improve.
4. Successful organizations plan and implement continuing self-renewal in purposeful cycles in order to remain successful and effective. Schools should, too.
5. Public schools in the nation have been criticized in recent years by various commissions and reports. There is a public and legislative demand for public school improvement and accountability.

School personnel and the board of school trustees recognize the legitimacy of these concerns, wish to continue the tradition of the district in pursuing excellence, and desire to respond in a forthright and responsible manner. Thus, the decision has been made to adopt a school improvement plan based on Effective Schools Research.

What Is Known About School Improvement

Research on educational change has clarified and specified some of the ingredients necessary for school improvement. "Change is a process, not an event," according to Michael Fullan, sociologist. The interactive phases of the process are described as adoption, implementation, and continuation or institutionalization. For the purpose of bringing together the research findings of the school improvement literature, the following propositions are offered:

Proposition 1

Public schools, individual classrooms, and school systems can and do improve, and the factors facilitating school improvement are neither so exotic, unusual, or expensive that they are beyond the grasp of extraordinary leaders in ordinary situations.

Proposition 2

People matter most in school improvement programs:

A. Teachers can and will implement new practices and programs, given active leadership from building and central office administrators, a chance for planning the implementation process, appropriate training, opportunities for interaction, breathing space to try and fail, and continuous assistance and support.
B. Building-level administrators make a difference in school improvement programs by establishing a climate of expectations that teachers will successfully improve practice and by providing on-site coordination, communication, assistance, and support.
C. District-level administrators affect school improvement programs by exhibiting active backing in the form of communicated expectations for success, psychological support, needed resources, and local facilitation assistance.
D. External assisters are most effective at the school level by providing concrete and practical assistance on implementation issues, such as planning, scheduling, problem-solving, and follow-through.

Proposition 3

An innovation is more likely to be adopted and implemented if it is perceived as having relative advantage, compatibility, simplicity, and legitimacy. Implementation is more effective when the innovation focuses on a specific need and demonstrates clarity in purpose and techniques.

Proposition 4

Specific resources are necessary to support effective school improvement programs.

A. Staff development programs that are task-specific and provide ongoing, continuous assistance and support; and
B. Monetary resources that are adequate to provide the people, materials, and time needed in the program.

Characteristics of Effective Schools

Several school researchers have identified those characteristics that distinguish the effective from the less effective schools. The number of characteristics may vary from study to study, because of the research design or the way in which the characteristics are subdivided or grouped, rather than from any real conflicts in the research findings. Three factors emerge in the school effectiveness research on characteristics:

1. School effectiveness encompasses the total school organization and culture as well as classroom management and teaching.
2. The characteristics can be defined and assessed individually, but the research indicates that all must be in place, at least to some degree, to maximize a school's effectiveness.
3. The interaction of the characteristics creates a critical atmosphere in a school which results in an impact that is greater than if the characteristics were applied individually.

The School City of Mishawaka will use the five characteristics (correlates) of effective schools as identified by Ron Edmonds. These were used for study and review by the entire instructional staff during the 1985–86 school year and are familiar to the staff. The following characteristics, or correlates, will be used to guide decisions, planning, and implementation of the school improvement project:

1. Positive School Climate
   There is a safe, orderly, and purposeful environment which is conducive to teaching and learning. The atmosphere reflects a focus on student achievement and the accomplishment of the school's mission. Staff and students share confidence in the students' ability to learn. Staff and students consistently accept responsibility for the established standards of behaviors and respect the school as a place of learning.
2. Clear and Focused School Mission
   The major focus of the school is clearly identified as instructional. A standard district curriculum is established and instructional goals are clearly defined. There is a shared staff understanding of, commitment to, and responsibility for clearly articulated goals, objectives, priorities, and assessment procedures.
3. Strong Instructional Leadership
   The principal acts as the instructional leader who effectively communicates the mission of the school to staff, parents, and students. The principal understands and applies the characteristics of instructional effectiveness in the management of the instructional program of the school. Staff members are involved in decision-making and share a leadership role in the improvement of instructional effectiveness.
4. Teacher Behaviors Which Convey High Expectations
   The staff shares the belief that all students can learn. Staff behaviors convey to students the expectation that all students have the ability and will master, at least to a minimum standard, the essential learning outcomes of the specified curriculum. Students will be engaged in planned learning activities for a high percentage of the allocated time and effective classroom management establishes a productive, work-oriented environment.
5. Frequent Monitoring of Student Progress
   Feedback on student achievement progress is frequently obtained. Multiple assessment methods, such as teacher-made tests, samples of student's work, mastery skills checklists, criterion-referenced tests, and norm-referenced tests are used. The results of assessment are used to improve individual student performance, and also to improve the instructional program.

Definition of an Effective School

If effective schools commonly possess the characteristics identified, how then is an effective school defined. The steering committee proposes the following definition:

An effective school is one in which all students learn the specified curriculum, regardless of factors in their background which have ordinarily been identified as those which prevent such learning.

The definition of an effective school rests on four assumptions:

The first assumption is that the primary purpose of schooling in our society is teaching and learning. Although schools have other competing alternative functions, such as providing custodial care for the community and providing evaluative data to future employers and to institutions of higher education, these responsibilities must not sublimate the primary mission.

The second assumption is that the degree of a school's effectiveness must be judged in terms of student output data, primarily student achievement measures. Through various accreditation processes, schools are often judged by the number of books in the library, the availability of curriculum guides, the certification of its teachers, or the quality of its teachers. Certainly, these are important areas; however, ultimately the effectiveness must be judged on measurable student outputs. Today's public is not satisfied with "Our school is doing a good job." They want schools to be accountable and to have proof of that accountability.

The third assumption is that an Effective School is one which demonstrates both quality and equity in its student outputs. The determination of quality is associated with the overall high level achievement of students. Equity is based on the belief that all students can demonstrate school success, especially when success is defined as mastery of the essential curriculum. The determination of equity is associated with the analysis of pupil achievement to ensure equitable distribution of that achievement across student subgroups.

The fourth assumption is that there are many things over which the school has control that can significantly influence student achievement. A school cannot alter the educational level of parents, the socioeconomic status (SES), nor the intelligence quotient of a child. However, working together, the school staff and community can unite to influence such factors as school climate, expectations, schoolwide emphasis on academics, instructional leadership, and frequent monitoring of pupils and programs. All of these factors, research shows, correlate with high student achievement.

As the late Ron Edmonds so eloquently stated: "We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us. We already know more than we need in order to do this. Whether we do it must finally depend on how we feel about the fact that we haven't done it so far."

Mission of the Mishawaka Schools

According to Dr. Lawrence Lezotte of Michigan State University, straightforward answers to the following two questions should be embraced in the school's mission statement or concomitant curricular goals and priorities:

1. "What do we want our students to know and be able to do when they complete their K–12 schooling?" and,
2. "How many students do we expect to learn what it is that we want them to know and be able to do?"

These questions, and acceptance of the following propositions as both reasonable and possible, form the framework for the mission statement of the School City of Mishawaka and its curricular priorities:

Proposition 1

The primary **goal** of public education is to empower students with choices. Restated, the goal of K–12 schooling is to give as many students as possible as many options as possible for choosing what they might do after the twelfth grade.

Proposition 2

The primary **function** of schools is teaching and learning. The empowering of choices is assumed to derive from what students are taught and what students learn. Therefore, the centering focus of the school derives from its program of curriculum and instruction.

Proposition 3

The primary **evidence** for establishing the effectiveness of a school is to be found in its student outcomes. It's essential to provide solid evidence which verifies that students, in fact, are learning what it is we want them to know and be able to do. These outcome indicators should be observable and measurable to assure pupils, teachers, parents, or the community that students are mastering the essential curriculum.

Proposition 4

In the final analysis, the effective school is a school that is successful in **teaching all** of its students the **essential skills** they need to know or to be able to do. The focus of each effective school is on quality **and** equity. The outcome indicators selected to demonstrate student achievement should reflect with accuracy the curriculum being taught. In addition, the outcome results should be examined in such a way that educators can be certain that no major subset of the student population is left behind.

These propositions form the basis for the following mission statement for schools in the School City of Mishawaka.

The School City of Mishawaka believes that all students can learn mastery of basic skills and that it is the responsibility of school employees to teach all students the specified curriculum at each grade level. The mission of the School City of Mishawaka, therefore, is to educate all students to their highest level of academic performance, while fostering positive development of their health, their attitudes, and their behaviors, so that each individual student may make a positive contribution to our democratic society.

IN MISHAWAKA, ALL STUDENTS WILL LEARN
SCHOOL CITY OF MISHAWAKA

SCHOOL IMPROVEMENT PLAN
—1986–87 YEAR ONE—

September

- Data completed for each student for disaggregated analysis of test scores by September 26, in order to encode for standardized tests administered to selected grade levels in late September and early October.

October

- October 29, 1986—Development Day with students dismissed.
- Staff surveys of effective schools characteristics conducted for each school and address by Dr. Lawrence Lezotte to entire professional staff.

November

- Assessment questionnaire completed by noncertified staff, selected parents, and selected students.

December

- Building-level improvement team formed in each school prior to December 19, and names reported to superintendent.
- One member of each school-level improvement team designated by the team to be its representative to the systemwide improvement team, and name reported to superintendent by December 19.

January-February

- Orientation and training of building-level improvement teams.
- Profile of each school developed based on surveys and standardized testing.
- District-level team meets to determine roles and responsibilities.

March

- Development of preliminary draft of school improvement plan for each school.
- March 27, 1987—Staff Development Day with students dismissed.
- Discussion of preliminary draft for school improvement in each school.

April

- Refinement of each building-level plan and discussion of possible action plans.
- District-level team meets to begin preliminary planning for updating district improvement plan for 1989–90 year.

May

- Each faculty reviews, revised, and approves final written school improvement plan for submittal to superintendent on or prior to June 1, 1987. Each plan should include indicators for measuring outcomes, cost estimates, time required and/or staff development requests.
- District-level team meets to make final district improvement plan for year four, 1989–90.

June

- Each building submits its final plan to superintendent for approval. Superintendent reviews and submits to the school board, with accompanying summarized cost and time estimates, for its approval.

—1987–88 YEAR TWO—

- Implementation of year one building-level plan in individual buildings with continued support and encouragement from central office.
- Complete update of disaggregated analysis of standardized test scores.
- Continue utilizing district and building-level teams to support implementation of building-level plans.
- Implement staff development programs necessary to support accomplishment of building-level plans.
- Continue curriculum cycle to develop aligned curriculum.
- Utilize disaggregated analysis of test results to plot student achievement and monitor building growth toward equitable learning environment.
- Complete evaluation of building plan, analyze test results, and re-evaluate building-level needs assessment to develop updated building-level plans for the coming school year.
- Develop new building-level plan for approval by the superintendent and board of school trustees for implementation during the school year 1988–89.

—1988–89 YEAR THREE—

- Implementation of year two building-level plan in individual buildings with continued support and encouragement from central office.
- Complete update of disaggregated analysis of standardized test scores.
- Continue utilizing district and building-level teams to support implementation of building-level plans.
- Implement staff development programs necessary to support accomplishment of building-level plans.
- Continue curriculum cycle to develop aligned curriculum.
- Utilize disaggregated analysis of test results to plot student achievement and monitor building growth toward equitable learning environment.
- Conduct new needs assessment, analyze test results, and evaluate results of building-level plan in order to generate data related to current school needs.
- Develop new building-level plan for approval by the superintendent and board of school trustees for implementation during the school year 1989–90.

San Pasqual Union School District: Working Towards School Effectiveness

Janet Chrispeels
Mary Beall
San Diego County Office of Education
San Diego, California

August 1988

San Pasqual Union School District

Became involved in Effective Schools process in 1986

Community

Population
500 registered voters

San Pasqual, located 30 miles northeast of San Diego. San Pasqual Valley is largely agricultural.

The residents are predominantly middle class, with 65–70 percent of the children coming from families that are professional, semi-skilled or skilled; the rest come from mostly unskilled families engaged in agriculture. Only 1 percent receive Aid to Dependent Children. The school district is in San Diego County, which shares a border with Mexico.

School District

Enrollment
217

Ethnic Composition (percent)

Asian-American	9
Caucasian	66
Hispanic	35

Per Pupil Expenditure

1988–1989	$3,105

Percent bussed
100

Area (in square miles)
30

Schools

Elementary school (K–8)	1

Number of Staff

Administrators	1
Certified teachers	10
Support staff	7

Student-Teacher Ratio

Elementary	24:1
Middle/junior high	26:1

Percent college-bound
NA

Abstract

San Pasqual Union School District is the only one-school district represented in this collection of case studies. Largely because of the less complex nature of a one-school district, San Pasqual's planning and implementation of the Effective Schools process has proceeded more smoothly than most larger districts. The district has also made good use of the San Diego County Office of Education's consultants and facilitators over the two years of implementation.

As a result of learning well the Effective Schools process for school improvement, San Pasqual has integrated a school-wide staff development program with the student monitoring system. Teachers plan for their training and focus on workshops which will help them understand the connection between the district mission statement and instructional decisions.

Because of the confusion which existed in the district (school) about teaching objectives, many teachers were not certain of what was actually included as core objectives for instruction. The curricular alignment process which followed, in which teachers collaborated to discuss tests and then formed the continuum of teaching objectives, is detailed in this case study. The subsequent process of curricular development, especially in the area of mathematics, is also described.

The strengths and limitations of a small one-school district are described, and strategies are offered to meet the demands of implementing the Effective Schools process consistently.

Brief Look at San Pasqual[1]

San Pasqual Union School District is located in north San Diego County about 30 miles northeast of the city of San Diego. The small K–8 school sits on the north side of the San Pasqual Valley, an agricultural reserve and site of the only California battle fought in the Mexican-American War. The original two-room school was built in 1918. These two rooms served the valley until 1970 when the current facility was built. The school still shares its site with an Indian graveyard. This peaceful rural valley, however, now abuts the rapidly growing city of Escondido. Approximately 30 percent of the school's 217 students, in fact, attend San Pasqual on interdistrict transfer permits. The school's population is 30–35 percent Hispanic in origin, coming mostly from semi-skilled and unskilled families who work on nearby farms. The other 65–70 percent of the student population comes from middle income, professional, semi-professional, or skilled families who work in a variety of professional and white collar jobs. A few families farm in the valley. Only one percent of the families receive Aid to Families with Dependent Children.

The enrollment of the school has steadily increased over the last few years so that there is now one class and one teacher per grade level. The staff consists of teachers, a retired teacher who serves as the librarian, an eighth grade algebra teacher, the school's PE teacher, and three classroom aides hired with Chapter 1 and State of California School Improvement funds. The kindergarten teacher works as a reading specialist in the afternoon.

Motivation for Launching the Effective Schools Program

The school has undergone some difficult personnel transitions in the last few years. In 1986 the Board of Education terminated the contract of the superintendent-principal; however, this person was retained as the kindergarten teacher and business manager, and still held the title of principal for the duration of the year. One board member resigned from the board and applied for the position. He was hired as the new superintendent-principal in the spring of 1986. This course of events caused considerable tension and confusion among staff members, even though the new superintendent displayed considerable diplomatic skills, and all were trying to make the best of an awkward situation.

The new superintendent-principal decided the time was ripe to take stock of school programs, solicit views of students, staff, and community, and to assess student achievement. He contacted the San Diego County Effective Schools Program, which offered an appropriate vehicle for helping the principal in this task of assessment. The county's program consists of the following components: data collection, data analysis, development of an improvement plan, implementation, and reassessment. The data collection involves information collected through the following means: San Diego County Effective Schools Surveys for staff, parents, and students; an Effective Schools interview for staff members; the Association for Supervision and Curriculum Development Organizational Health Descriptive Questionnaire; classroom time-on-task audits; and a disaggregated analysis of test scores.

After the county office shared all of the elements of the Effective Schools program with the principal, he was eager to begin. The next step was to conduct an orientation for the staff and allow them time to discuss the merits of launching an Effective Schools assessment and improvement program. Several staff members were reluctant. They were uncertain how the information would be interpreted by the former principal. Also they thought they did not know the current principal sufficiently well to complete the surveys. However, it was pointed out that there was a "don't know" response that they could use in completing the survey to address those areas where information was lacking. The principal was able to persuade the staff that he genuinely wanted their views and that he wanted a good data base to guide their improvement efforts. In December 1986 the Organizational Health and Effective Schools staff surveys were administered, and the interviews conducted. In January 1987 the parent and student (upper grades only) surveys were completed. Also, the teachers were trained to conduct the time-on-task audits. Although they had enjoyed the visits to each others' classrooms during the training sessions, the staff decided not to do the audits themselves. Thus, county office staff assisted in this part of the assessment as well. The school staff was not functioning as a team yet, and previous tensions were too near the surface to risk observing each others' classrooms in a formal way with data being recorded.

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[1] The authors wish to thank J. Gordon Christensen, Superintendent-Principal of San Pasqual Union School District and the teachers—Bryce Bacher, Wynona Behling, Patricia Gammie, Karalee Gorham, Marydee Hinrichs, Diana Kirby, Patricia Matson, John Mayo, Jane Trussel, Victoria Young—and the staff of the school—Steve Bostrom, Candi Gates, Linda Govatos, Bob Johnson, Dee Petinak, Lidia Quiroz, and Lola Rosas—for allowing us to tell the story of their improvement efforts. All of them are dedicated educators who have worked especially hard in the last two years to strengthen the quality of the educational program for all children at San Pasqual.

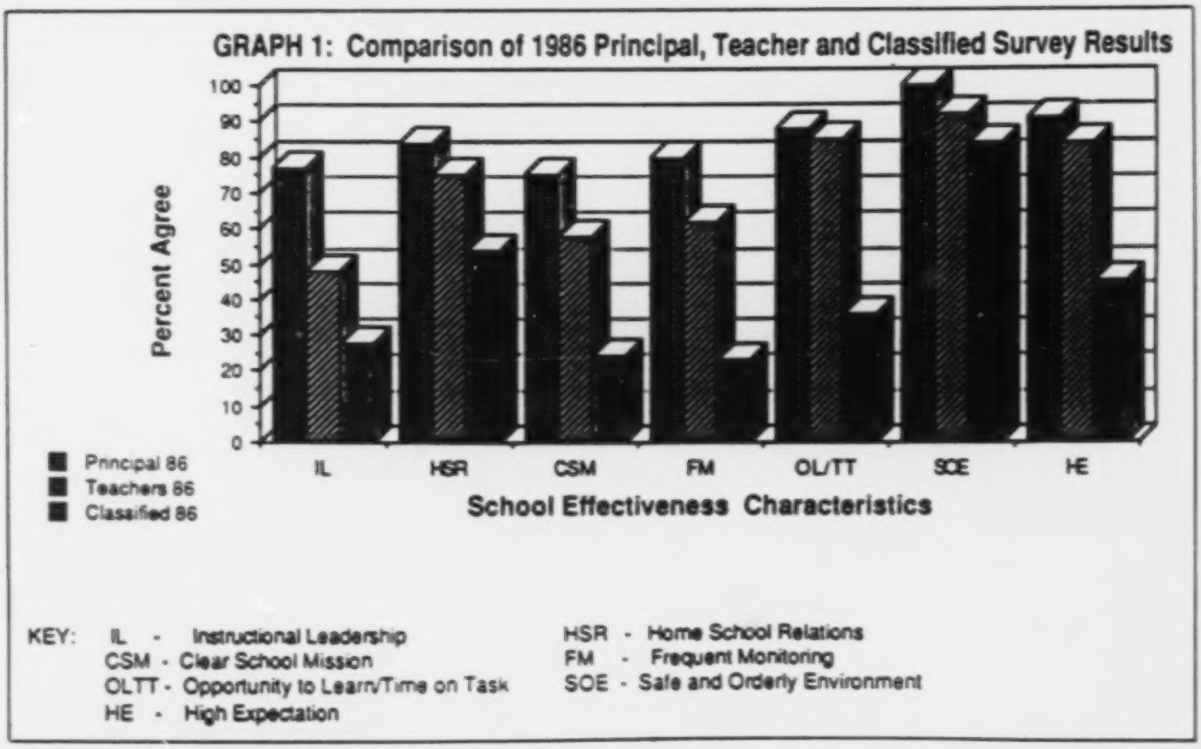
At the end of January, once all the data had been collected, an all-day planning day was organized for the staff. The staff spent the morning working in small groups, with each group analyzing all the data for two different correlates. Each team identified strengths and targets for improvement by doing item analyses and comparisons from the different surveys. They also disaggregated test data from the California Assessment Program (CAP).

Some of the data are summarized in Graphs 1–4. Graph 1 presents the responses to the Effective Schools Surveys from teachers, principal, and classified staff. This graph shows that the views of the teachers and classified staff are not as positive as the principal's, especially in the areas of instructional leadership, clear school mission, and frequent monitoring. On the whole the responses of the classified staff are much less positive. An item analysis revealed that for many items, respondents marked "don't know." In discussing the data, a critical question for the staff was (1) what do they need to know and (2) how can they be kept better informed.

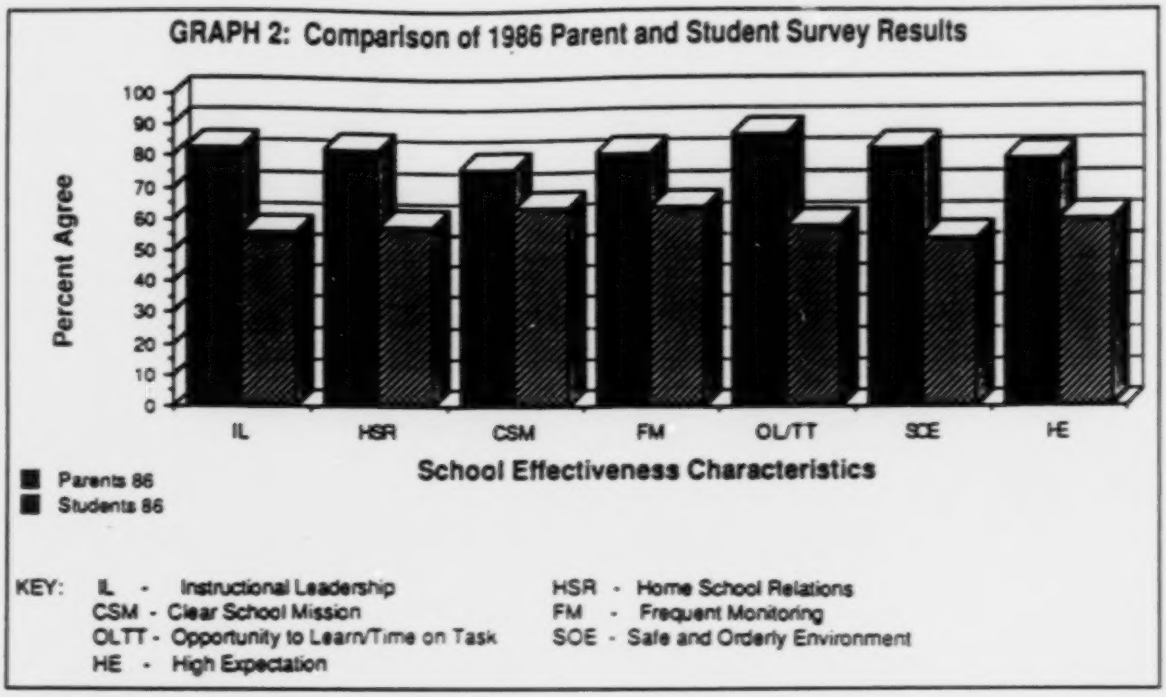
Graph 2 presents the responses of parents and students, which show good support for the school. The students, however, view the school less positively. Graph 3 depicts the composite results of the time-on-task audits. This snapshot of audits revealed a relatively high time-on-task percentage of 87 percent and a higher than average interactive time allocation of 55 percent. Graph 4 shows some of the disaggregated test data that were shared with the staff. This graph shows that students whose first language is not English do not do as well as English-only students.

In the afternoon the staff turned their attention to developing a school-wide discipline plan since this was one of their top priorities based on the needs assessment data. Dr. Sammie McCormack from the San Diego County Office of Education assisted them in developing a school-wide positive discipline plan. By the end of the day the staff had a good understanding of the Effective Schools data, had outlined a school-wide discipline plan, and had decided that one of the next tasks would be to develop a mission statement for the school. Table 1 is a sample page from the San Pasqual Effective Schools Assessment Summary Report that presents data on the clear school mission correlate. It illustrates how strengths and targets for improvement are identified and why formulating a clear school mission was chosen as one of the areas for attention.

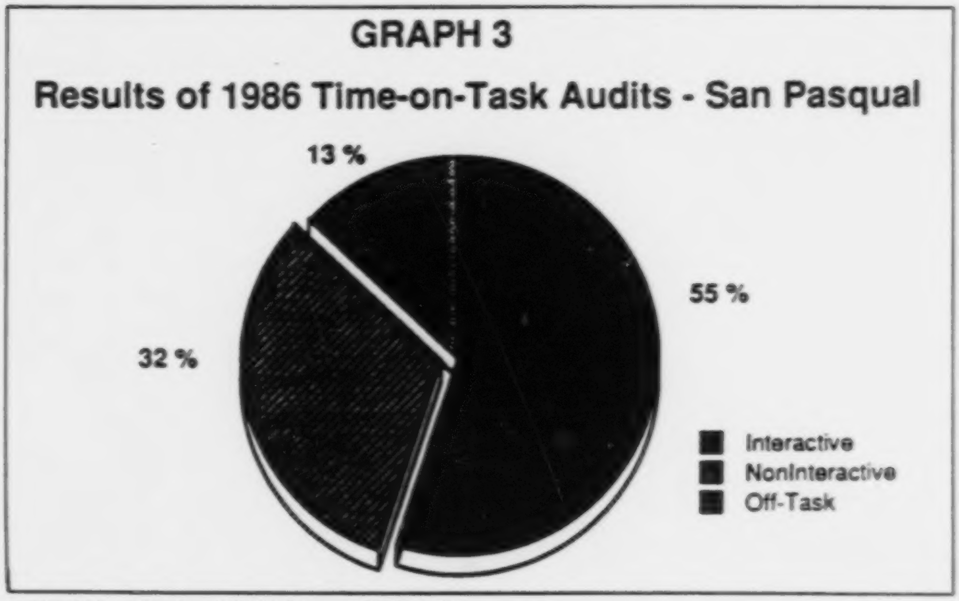
The staff morale soared at the conclusion of this day. Many commented that it was gratifying and rewarding to be focusing on school programs and students. They reported that they had not worked together like this as a staff for a long time. The Effective Schools process proved to be a healing one,



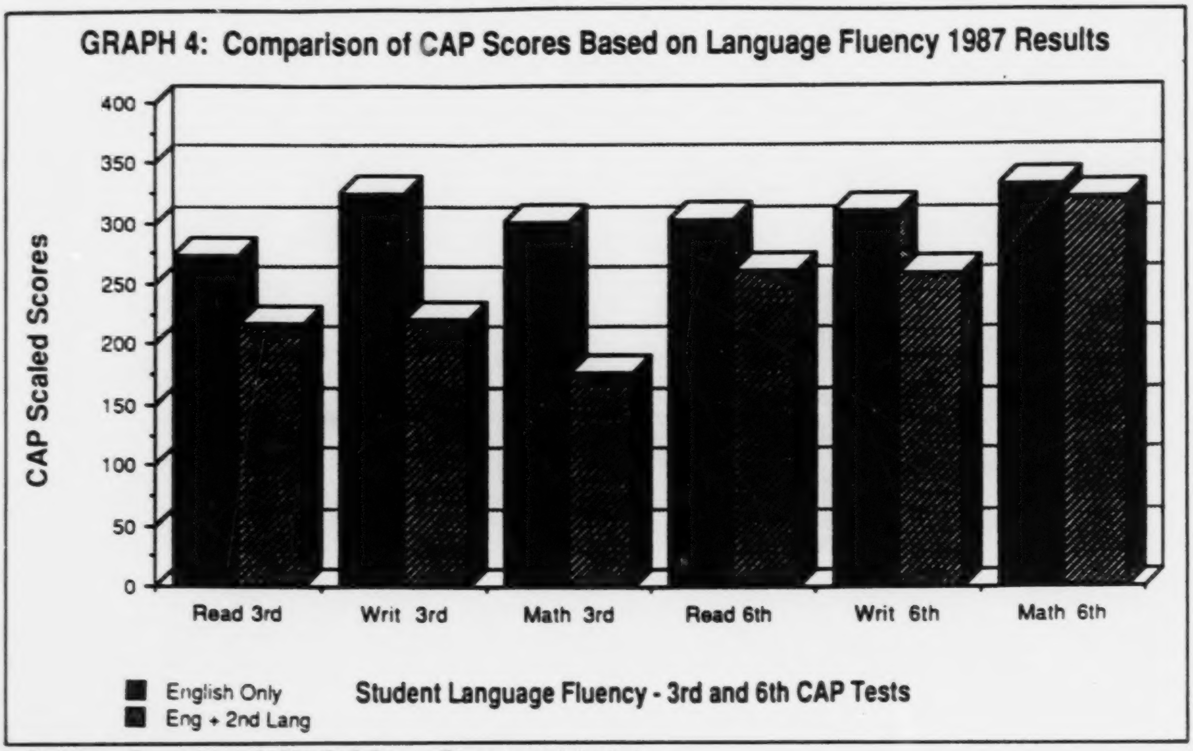
Graph 1. Comparison of 1986 Total Results



Graph 2. Comparison of 1986 Parent & Student Results



Graph 3. Results of 1986 Time-on-Task Audits



Graph 4. Comparison of 1986 CAP Scores: Disaggregated Analysis

enabling the staff to overcome previous divisions and mistrust.

In February the superintendent-principal, a board member, and a staff member attended the county's Effective Schools Conference where they heard Larry Lezotte and Robert Fortenberry. They also learned strategies first hand from other San Diego County principals and staff members who were implementing school effectiveness programs. Participating in this conference helped the staff to understand more clearly school effectiveness goals and processes. Later that spring McCormack reviewed and refined the positive discipline plan with the staff and conducted an evening workshop for about 50 parents to explain the discipline plan and give parents tips for positive interactions at home. Several staff members attended. By late spring the principal and staff had developed a mission statement.

Funding

The Effective Schools assessment and assistance services are provided free to San Diego County Schools. The estimated cost of the personnel time and services is approximately $1,500 to $2,000 per school per year. General fund monies provided the release time for the staff to learn to conduct time-on-task audits, attend the Effective Schools Conference, and other selected inservice activities. The staff inservice day and several staff meetings were devoted to school improvement.

In the second year of the school improvement efforts some funds were allocated to achieve the school's goal of improving their mathematics program. Funds, including contributions from the Parent-Teacher League, have been spent for math materials, a staff development consultant in math, and attendance at math conferences by staff members. The allocation, however, did not exceed $2,500. State textbook funds were used this past year to acquire a new math textbook. The San Diego County Office of Education again provided free ongoing support and consultant services. The principal has actively and symbolically supported the program by his allocation of time to classroom observations, attention at faculty meetings to instructional issues, and follow through to see that the goals set by the staff are carried out.

For the past two years the school has participated in the California School Improvement Program and received $6,000 in state funds. Most of the entitlement money funds classroom aides, with a small portion going toward instructional supplies. The school-based improvement program permits the staff to hold a staff inservice day and collect Average Daily Attendance funds generated as though the students were in attendance. Though it is customary to develop a writ-

Table 1
Clear School Mission

Relative Strengths

- 100 percent of the teachers surveyed agreed or strongly agreed that academic achievement is stressed as the highest priority in the school.
- 92 percent of the parents surveyed indicated that their children understand that essential academic skills is the main goal of education.
- 88 percent of the parents surveyed agreed or strongly agreed with the overall purpose and goals of San Pasqual elementary school.
- 98 percent of the parents surveyed indicated that the school provides the necessary textbooks and materials to support the school's instructional program.
- 74 percent of the students surveyed indicated that teachers explain what they will learn in each of the courses.

Targets of Improvement: Strategies for Improvement

- 26 percent of the teachers surveyed indicated that the school has a written statement of purpose that focuses on student learning and achievement.
- 88 percent of the teachers interviewed strongly disagreed that there is a written statement of purpose that guides instructional decisions.
- Up to 50 percent of the teaching staff were uncertain as to whether written standards of expected student achievement exist in all major content areas.
- 38 percent of the teachers surveyed disagreed that students must achieve identified standards in all subjects.

ten plan, the school in these first two years has used the Effective Schools data to guide its improvement efforts.

Evidence of Improvement

The school administers two norm-referenced tests, the California Assessment Program (CAP) given to third, sixth, and eighth grade students in the spring of each year, and the Comprehensive Test of Basic Skills (CTBS) given at each grade level each spring. In 1988 was the first time that eighth grade students also took the direct assessment of the writing portion of the CAP. Individual teachers use chapter tests to assess mastery of class work, and a minimum competencies/proficiency tests are given at fourth, sixth, and eighth grade. The proficiency tests were developed by the district. No comprehensive criterion-referenced tests are given.

With such small sizes, the CAP, a matrix sampling test, presents some problems in providing valid data. The state test is useful, however, because test data are disaggregated by family income and language proficiency. The language proficiency data provides a reasonably accurate measure because there are sufficient numbers of students in each subgroup. The CTBS is taken by every child, but the data are not reported to the school in a disaggregated form. The school had previously not disaggregated these results. In 1987 the disaggregated eighth grade CAP test results show that there are considerable inequalities in achievement between the Hispanic and English-only students in reading, written language and mathematics. Graph 5 illustrates these disparities.

As described in the previous paragraph, in the second year of the improvement program, the staff's focus has been on improving math instruction and achievement. The 1988 CAP and CTBS results indicate that the goal was achieved. Graph 6 shows the CTBS math results for 1987 and 1988. Gains were made at all but two grade levels. Graph 7 shows the comparison of 1986–1987 and 1987–1988 in all areas tested by CAP at the third and sixth grade levels. Gains were made in math at both third and sixth grade. The disaggregated results are encouraging for sixth, but less so for third, as shown in Graph 8. Graph 9 shows that when the CTBS math results are disaggregated by quartile, the second, sixth, seventh, and eighth grade results are very positive for the low-income Hispanic students. At the 7th and 8th grade levels no students scored in the bottom quartile and only a few in the second quartile. Unfortunately the disaggregated results are less encouraging at some of the earlier grades. One explanation for this, based on other studies of schools serving limited-English proficient students[2] is that it takes until fifth or sixth grade for the students' English to be sufficient for them to show gains more equivalent to English-only students.

The language arts portion of CTBS and CAP showed promising gains both in overall achievement and in disaggregated results. However, in reading

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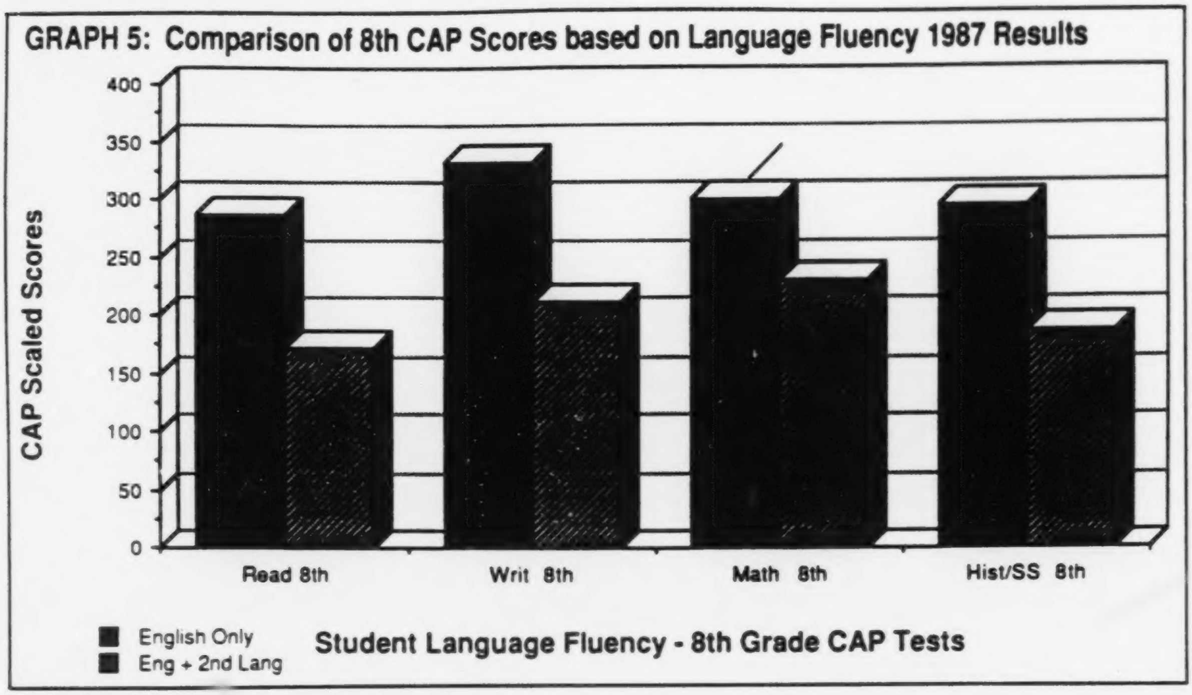
[2] Pollack, S., Chrispeels, J., and Watson, D. (1987). *A Description of Factors and Implementation Strategies used by Schools in Becoming Effective for All Students.* Paper presented at the Annual Meeting of the American Educational Research Association Meeting, Washington, D.C. April 1987.



Graph 5. Comparison of 8th Grade CAP Scores, 1987

considerable inequality of results exists between subgroups of white and Hispanic students.

The school has three aides, and this past year, a part-time reading specialist, who assist students with the greatest need. However, according to the Effective Schools Research, the pullout programs are disruptive to the regular program. Furthermore, the school does not have a bilingual teacher or a bilingual program for its Hispanic students. Next year's improvement target will be in the area of reading and language arts with plans to implement a home reading program and to reevaluate the pullout programs.

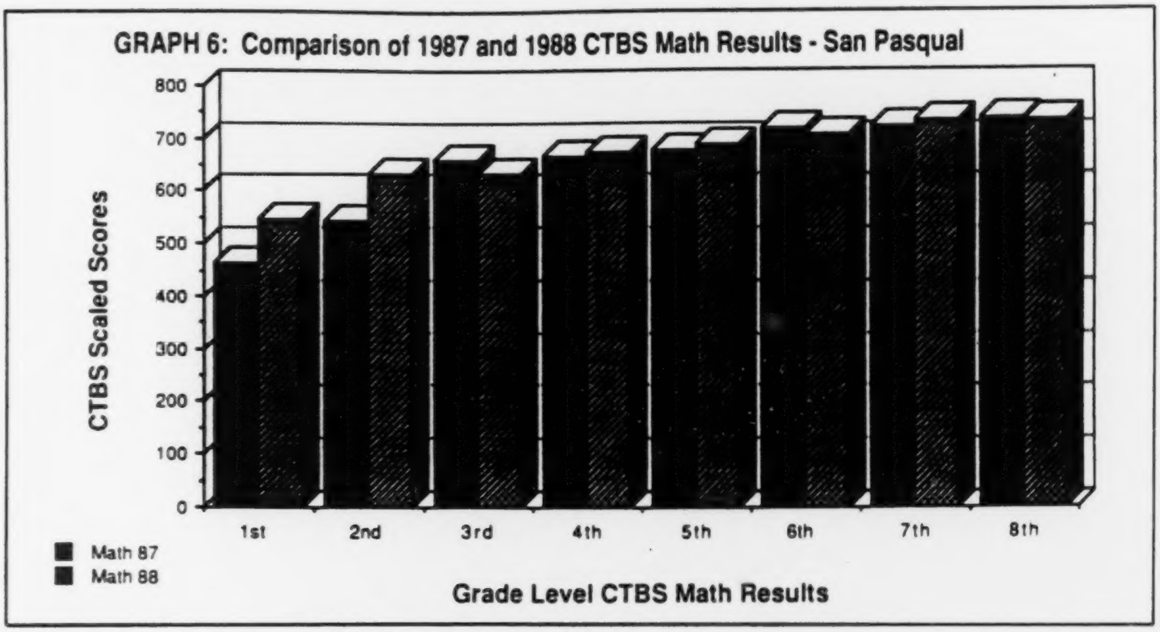
In addition to test score data, the School Effectiveness Survey represents another measure of change. The survey for the staff was readministered in June of 1988. Graph 10 compares the results of principals and teachers in 1986 with those of 1988.

One should note two important changes in the school. First, the principal and the teachers have moved closer together in their views about the school. Second, substantial improvements have been made in three of the correlates: instructional leadership, clear school mission, and frequent monitoring. Also, there has been a small gain in the area of high expectations. In the recent survey, the staff results reflected less uncertainty and greater approval of the principal's leadership. For example, the 1986 survey results show that 75 percent of the teachers were uncertain and 25 percent disagreed that the principal provided clear, strong, and central instructional leadership. In 1988 the survey results showed only 22 percent of the staff members were uncertain and 11 percent disagreed regarding the principal's leadership. Clear school mission has been enhanced by the development of a mission statement for the school that focuses on enabling all students to develop skills, goals, and dreams. In the area of frequent monitoring, an item analysis of the surveys shows that changes have occurred in regard to using test results to plan for making reteaching and remediation an important part of instruction. These three correlates have received the most attention, and they reflect the greatest gains in terms of a positive opinion shift.

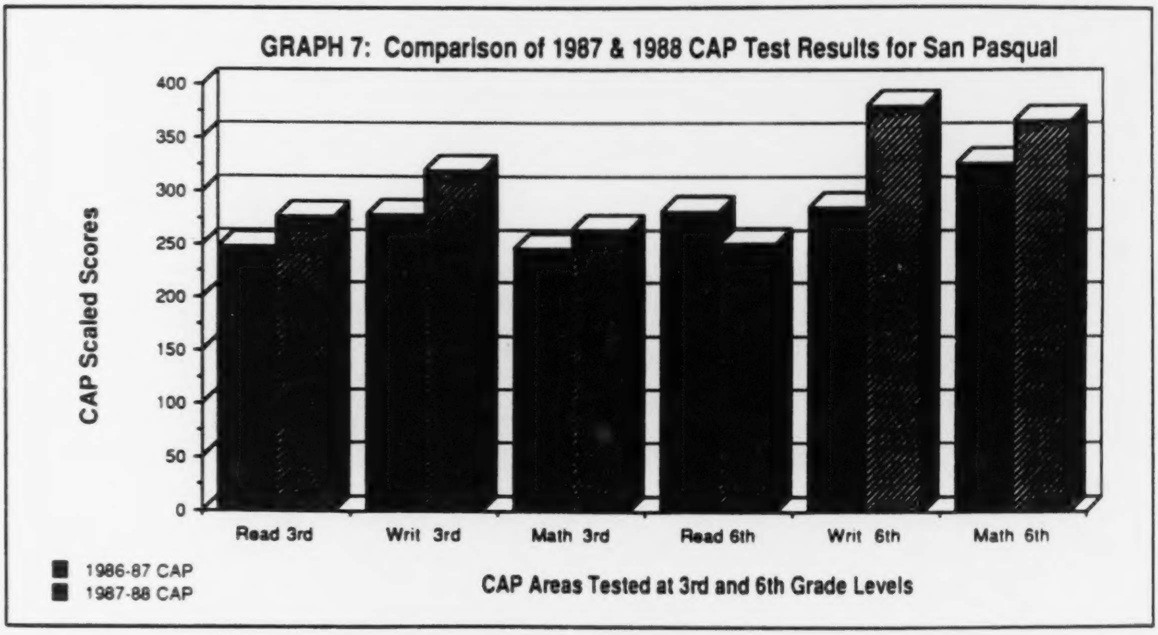
Graph 11, a comparison of the classified staff's views in 1986 and 1988, shows a shift in attitudes. The parents and students were not resurveyed in 1988 and no comparative data are available.

Influence of Effective Schools Process on Program Components: Curriculum Alignment

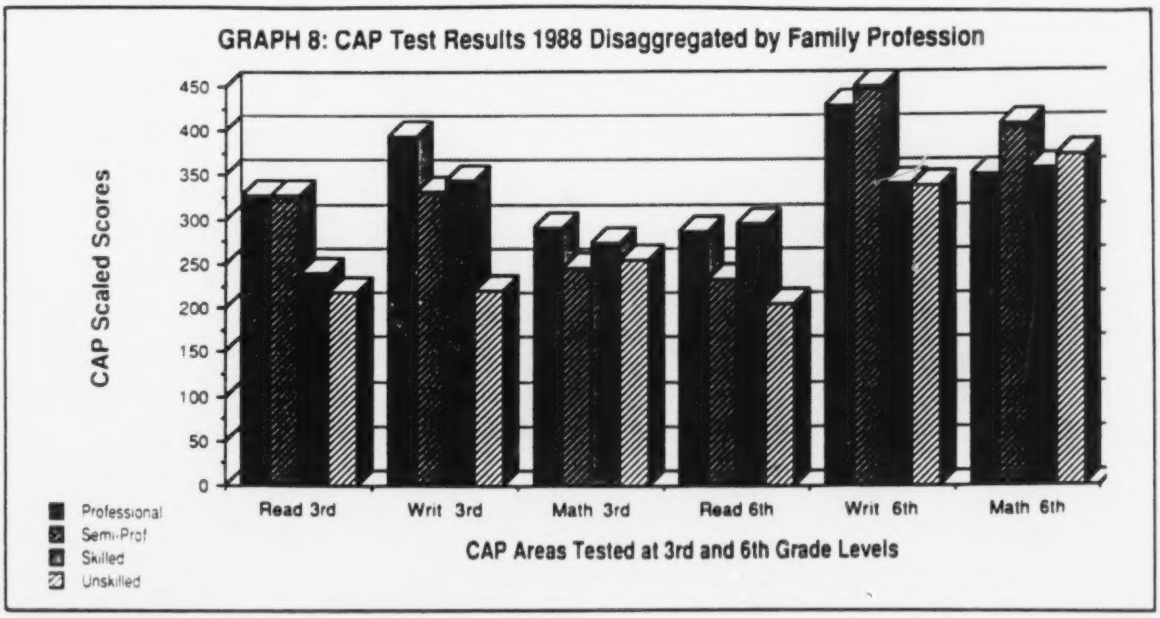
The Effective Schools correlates gave the focus needed to continue San Pasqual's school improvement process into the second year. With the staff believing that the school is a major determinant of achievement, they formulated a plan to implement interventions in



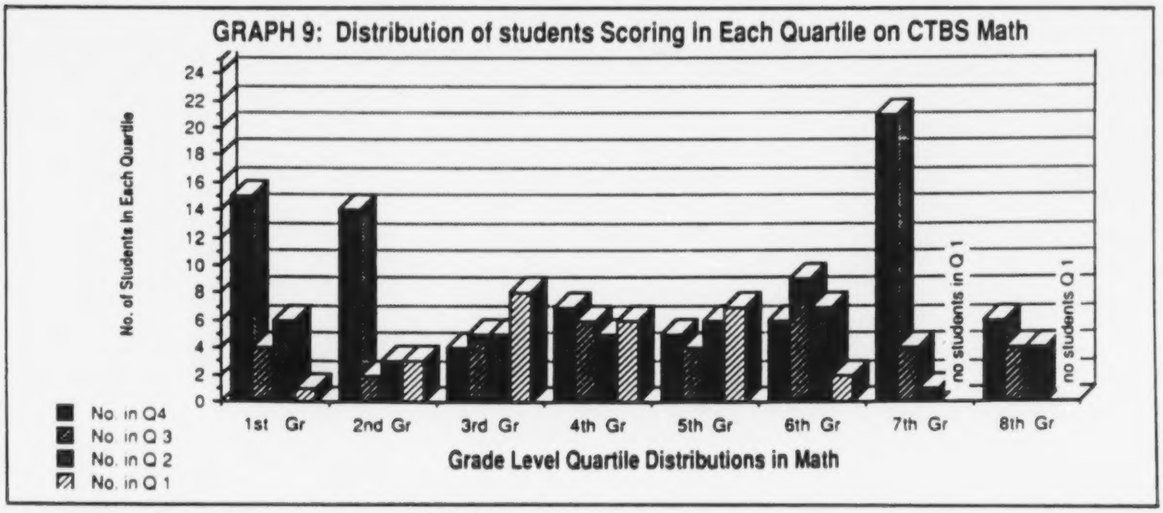
Graph 6. Comparison of CTBS Math Results, 1987, 1988



Graph 7. Comparison of CAP Test Results, 1986–1987 and 1987–1988



Graph 8. CAP Test Results 1988, Disaggregated Analysis



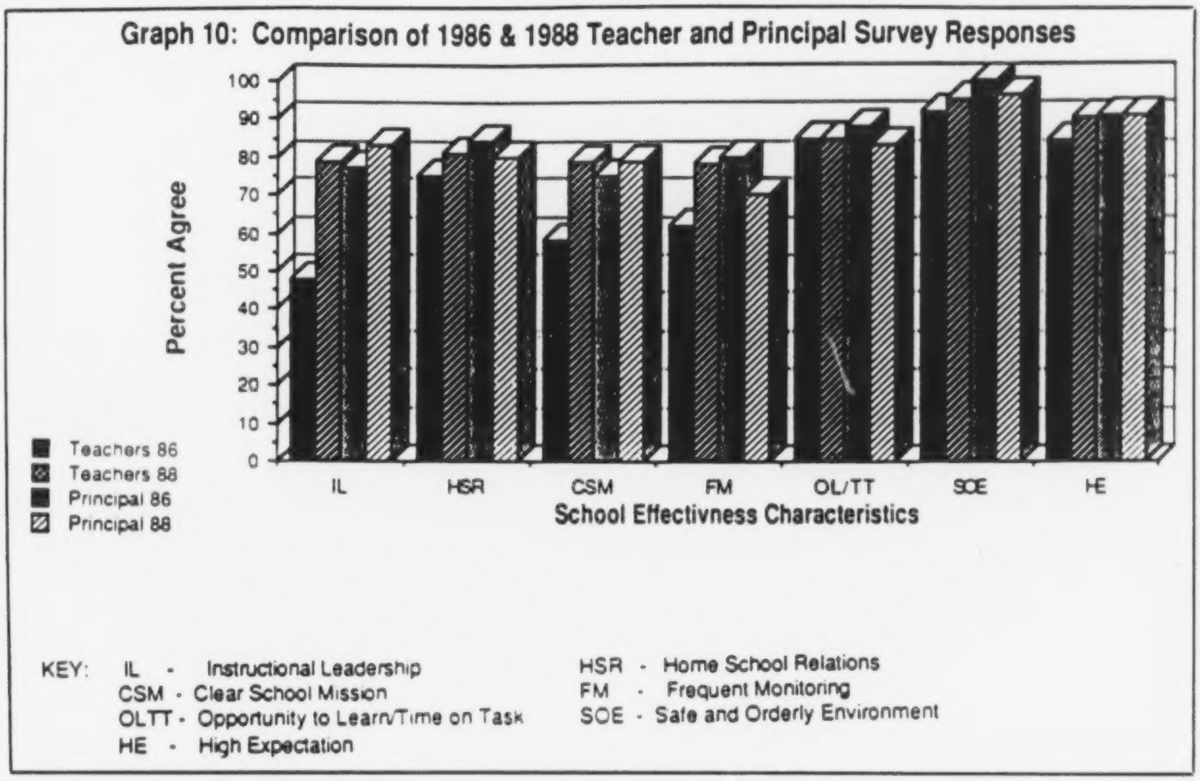
Graph 9. Distribution of Students, CTBS Math

the curriculum. Curriculum alignment in mathematics was targeted as a need because of the adoption of a new textbook series. The survey data also indicated not all staff members were in agreement that instructional objectives were in place and that written standards of expected student achievement existed.

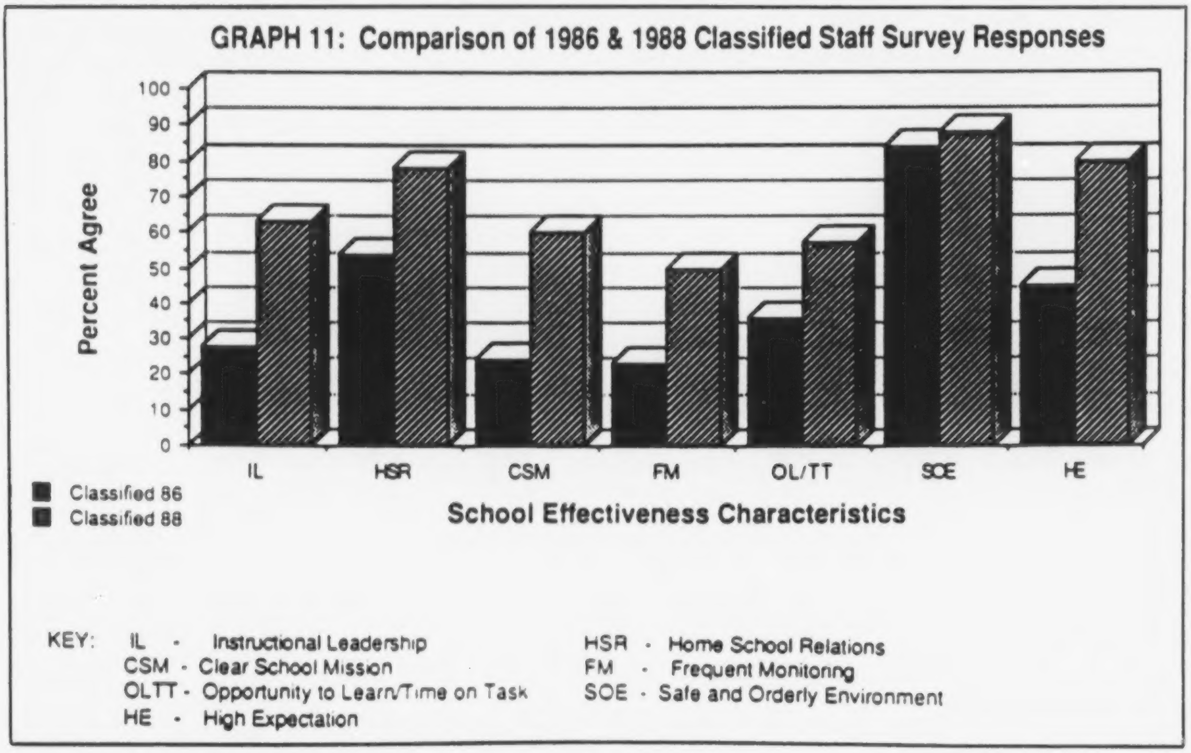
The school staff spend two afternoons looking at all the variables that make a difference in student learning, i.e., what teachers choose to teach (instructional objectives); how it is taught (instructional methodology); and the order in which things are taught (sequencing and timing). To strengthen the K–8 mathematics program, the following steps were carried out:

Step 1: Review the Objectives and Benefits of Curriculum Alignment

The curriculum alignment process focuses on defining the core set of teaching objectives that all stu-



Graph 10. Comparison of 1986–1988 Principal's and Teachers' Responses



Graph 11. Comparison of Classified Staff's Responses, 1986 and 1988

dents are expected to master, selecting appropriate materials and strategies that will insure mastery, and using appropriate tests to measure the level of student mastery. The teachers examined reports and statistics which indicated that the current mathematics textbooks had voids in providing lessons that prepared students for all test questions. Teachers noted that some questions asked on the norm-referenced tests covered material that was not presented in the texts until after the tests. In addition, they discovered that the format and appearance of problems in the textbook were quite different from the way the problems were presented on the tests. Teachers agreed that the material in the textbook could not be adequately covered in the school year. They discussed the need to make informed decisions about what would or would not be covered.

Step 2: Clarify the Objectives of the Instructional Program

Primary, middle, and upper grade teachers grouped to examine a set of core objectives by grade level that were matched to the tests given to their students. All teachers had an opportunity to discuss the appropriateness of the objective, decide if it was important, and if they should teach it. Next they decided whether the objective should be to master by the year's end, and what percent of the students should achieve mastery. Several of the teachers concluded that they were not thoroughly aware of what was being tested. They also thought they were covering other objectives of equal importance that were not covered on the tests. However, they recognized that not all students were mastering the core objectives and that this presented a challenge. A core curriculum in mathematics was developed for the school.

Step 3: Establish the Top Instructional Priorities in Mathematics

Teachers identified the top priorities of the instructional program by performing an item analysis of the mathematics portion of the CTBS test. They identified the essential skills that every student needs to have and then established priorities for teaching and learning.

Step 4: Develop an Effective Instructional Plan for Teaching the Mathematics Objectives

The teachers realized that they needed to plan the year's activities so that the objectives for the year are fully covered and mastered. The teachers recognized the need to schedule some lessons that appeared in the back of the textbook earlier in the school year before testing occurred. For example, one teacher observed that ration, proportion, and percent are not presented until the end of the textbook, and that 25 percent of the test items focused on this area. The teachers recognized that they were in charge and the textbook did not have to dictate sequencing and presentation of the objectives.

Step 5: Increase Math Competencies and Check Progress

The staff adopted Bellworks, a set of sponge activities, that follows the formatting, vocabulary, and sequencing of the test items for which students are being held accountable.

Step 6: Increase Instructional Skills of Teachers in Mathematics

The staff scheduled a day-long inservice with Leigh Childs, county office mathematics consultant, and Merilyn Beck, mathematics consultant for the Encinitas School District (Encinitas, CA). The consultants taught the staff cooperative learning strategies and higher level thinking mathematics lessons that would provide the instructional strategies to best support the core set of objectives adopted by the staff. All teachers committed themselves to trying out three new lessons in the classroom that supported the objectives and the new state Mathematics Framework.

Impact of Effective School Process on Disaggregated Student Achievement Data

As mentioned previously, the CAP program does provide disaggregated student achievement data. However, this information is infrequently used by schools, and especially by the classroom teacher. The school effectiveness process has helped the staff to highlight the value of the data contained in the CAP report to the school. In addition, San Diego County Office of Education staff members have worked with the principal to disaggregate the results by Hispanic and white subgroups from the CTBS. This information gives the school a clearer picture of student needs.

The school does not have a system of criterion-referenced tests, except for their proficiency tests. The smallness of the district and the lack of auxiliary staff preclude the district developing its own criterion tests. However, the superintendent-principal is planning to visit a neighboring district, Escondido Union Elementary District, which does have a complete criterion-

and norm-referenced testing program. If there is sufficient alignment between the texts and objectives of the two districts, the district may be able to use their criterion testing system.

The Effective Schools surveys reveal that the district needs to devote more attention to the objectives and mastery standards expected in each subject and at each grade level. Attention has been given to mathematics this year. Language arts and reading are likely to be the focus next year. As the staff sets its learning objectives and aligns its curriculum, it will be in a better position to find appropriate criterion-referenced tests.

Staff Development Programs

As a result of the Effective Schools program, staff development is now viewed as one vehicle for implementing the improvement plan. Previously San Pasqual had no school-wide staff development. The one day set aside for staff development had consisted of teachers selecting a school or class they wanted to visit and spending a day there. Since San Pasqual had no needs assessment process, little data were available to guide the planning of a staff development program. Now with data from the school effectiveness surveys and data from analyzing the test results, the school has information to guide its staff development.

Two important staff development changes have been implemented. First, staff members now have opportunities to attend workshops and conferences linked to the improvement goals. For example, this year a staff member and the principal attended the Greater San Diego Math Conference to support the school's efforts in math. Second, two school-wide staff development days were arranged. The first year's focused on reviewing the school effectiveness data and developing a discipline plan; the second year's focused on mathematics, e.g., learning how to use manipulative, problem-solving, and cooperative learning strategies. In addition, a day was devoted to aligning the math curriculum.

The principal has also made a substantial commitment to strengthening his own skills by participating in the California School Leadership Academy. This program provides 15 days annually of staff development for principals in such areas as vision, mission and goals, analyzing test data, curriculum and instruction, school climate, planning staff development, evaluating staff, and home-school partnerships. The principal will participate in the second year of the program during the 1988–89 school year. This leadership program fully integrates the research on Effective Schools and thus complements and supports the principal in his efforts to improve the school.

Comparisons of the responses from the Effective Schools survey conducted in December 1986 with the results of the survey completed in June 1988 show that attitudes regarding staff development have changed. Some items reflect the changes that are summarized in Table 2.

The School Improvement Process

San Pasqual Union has only nine teachers and a librarian/resource/physical education teacher; therefore, the whole staff served as the planning team. The board of education has been fully supportive of the school's efforts. The principal has given periodic reports to the board regarding the school's progress and improvement plan. They have expressed their support by renewing the superintendent-principal's contract. The parents have been involved through input on the Effective Schools surveys. In general their views of the school are very positive. In the first year of the improvement program, parents were also involved in a workshop on assertive discipline. The parent group usually raises funds as one of its primary functions. However, as a result of the improvement efforts, they are being brought in more fully as partners. For example, next year one parent, who has a background in children's literature, will coordinate the school's literature program. She will be spending three hours a week at the school reading stories to the students and assisting them in selecting reading materials. Other volunteers will be solicited for this program as well as for other purposes.

In the fall of 1988 the school staff and parents began preparing for the California State Program Quality Review which was conducted in the spring of 1989. The review required a self-study conducted by staff and parents. The school effectiveness surveys and data formed the foundation for the self-study. In addition, the school staff examined in-depth curriculum and instructional practices. They compared the school's curriculum and instruction with the state's challenging quality criteria in six curricula and six school-wide areas. The criteria fully incorporate research from the Effective Schools and effective teaching literature.

After the staff completed the self-study, an outside review team of two administrators from other nearby districts and a county office staff member spent three days at the school observing classrooms, interviewing staff and parents, and comparing their own findings with the school's self-study. The Program Quality Review (PQR) culminated in a Report of Findings. On

Table 2
Change in Attitudes Regarding Staff Development

Survey Item	Year	% Disagree	% Don't Know	% Agree
Principal emphasizes participation in staff development activities?	1986	0	13	87
	1988	0	0	100
Principal and staff plan staff development activities?	1986	25	0	73
	1988	11	0	88
Primary focus of staff development is increase knowledge of topic?	1986	0	50	
	1988	0	0	100
Primary focus of staff development is acquisition of new skills?	1986	13	63	26
	1988	22	0	88
Primary focus of staff development is application of knowledge and skills?	1986	13	38	50
	1988	0	22	77
Principal provides follow-up assistance for skills learned in staff development activities?	1986	0	38	63
	1988	0	11	89
Is there a staff development program based on school goals?	1986	13	75	13
	1988	11	11	78
Is staff development evaluated on evidence of use in the classroom?	1986	0	88	13
	1988	22	56	22

the afternoon of the third day of the review, the PQR team and staff met to develop an action plan. Three major improvement targets were set: language arts, visual and performing arts, and the special needs of students covered by state and federal programs such as low achieving students, limited-English proficient students, and gifted and talented students. The action plan details who, what, when and how the improvements in each of these critical areas will be made.

The PQR team found that the school had made good progress in many areas, and they identified as strengths the Effective Schools process, the positive school climate, the alignment of the math curriculum, the clear school mission that focused on learning, and the leadership of the principal. The three year improvement plan indicates that learning objectives need to be developed in language arts and in the visual and performing arts. Staff from the San Diego County Office of Education will again assist the school staff in developing these curriculum objectives and engaging in curriculum alignment as they had done for math. The plan also states that the staff will need to work toward a literature-based reading and language arts program and to modify grouping practices, moving away from traditional reading groups organized around a basal reader.

To better meet the needs of its limited English-speaking students, the review team recommended that the school focus future inservices on the acquisition of second language skills, visit schools implementing the English for Limited-English Proficient Students Program (ELEPS), adopt and implement the ELEPS program, and attend conferences on the writing process.

The review process confirmed the gains the school had made during the previous two years and commended the staff for their efforts. The self-study and review also set some clear targets for future growth, thus keeping the school effectiveness and improvement momentum going.

Personnel Evaluation System

In California, the personnel evaluation system is spelled out in state law. The number of formal observations is specified as one every other year. The law also defines the procedures to be followed. Each year teachers write two to three objectives on which they will be evaluated and state what evidence will be collected to demonstrate accomplishment of the objectives. At San Pasqual, the principal does not make formal observations other than those specified by California law. Teachers are uncertain whether or not the principal plans with teachers what will be observed and adequately discusses the observations in a post-observation conference. However, the staff agrees (100 percent) that the principal makes frequent contacts with students and teachers, is highly visible throughout the school, and is accessible to discuss instructional matters. Another change since the implementation of the Effective Schools program is that faculty meetings frequently focus on instructional issues; 78 percent agree and 22 percent are uncertain. Previously 38 percent had said instructional issues **were not a focus** and 50 percent said they did not know.

The principal reported that he has changed personnel evaluation practices in two ways. First, when he is observing classrooms, he now looks for much more than just an orderly, neat classroom with attractive bulletin boards. He is more alert to how time is used in the classroom. He observes instructional practices more carefully. He is on the lookout for equality of treatment by the teacher among all students. Second, the principal said that now when he has the opportunity to select new staff members, he is looking for different skills, and for teachers that have some knowledge of the Effective Schools literature and practices.

Problems, Issues, and Concerns Encountered

Once the initial concerns of the staff were addressed, the school effectiveness efforts have met few obstacles at San Pasqual. However, the small size of San Pasqual contributes both strengths and limits as the district tries to implement its Effective Schools program. One asset of smallness is that it facilitates communication. Once a direction has been set, communication about the direction and monitoring are relatively easy tasks. Involvement of the whole staff is possible thereby greatly increasing ownership of the plan and speeding implementation. The small number of teachers means that it is easier to plan and coordinate a K–8 curriculum. On the open-ended comments of the school effectiveness surveys, the small size was mentioned by many parents and staff as a strength of the school.

However, the small size poses some problems as well. Few extra staff members are available to take on additional work. In particular San Pasqual has no specialists in the district who can assist the staff. They must rely on the outside assistance of the county office staff or other consultants. The superintendent-principal must do all of the school paperwork as well as attend to the district administrative tasks. Resources, both staff and budget, are limited for meeting the needs of the limited-English proficient students. Currently the district allocates only one staff development day a year. This provides very little planning, training, and implementation time for staff. The school plans to expand its staff development time next year by increasing the school day by 15 minutes. The time will be devoted to sustained silent reading. The extra minutes generated will allow the staff to have two additional minimum days for staff development.

Advice for Others Implementing a School Improvement Process

In guiding others in carrying out a school improvement process, the superintendent-principal advised securing the full support of the board of education. He found this support had a positive impact on the successful implementation of the school effectiveness efforts.

His second recommendation is, "Focus on a doable objective that everyone can rally behind." Given the fact that there were tensions and confusion among staff members when the process was started, it was important to undertake an objective that would bring the staff together and have some immediate effects. The success of implementing the school-wide discipline plan laid the groundwork for addressing curriculum and instructional issues in the second year.

The third, engage the staff in an analysis of learning objectives in a particular curriculum area and to spend time seeing that these objectives are covered in their materials. Analyzing test items also proved extremely useful for the staff. In larger school districts, it is more likely that this curriculum alignment activity would be done by district staff. In San Pasqual, the school staff is the district staff. The exercise proved to be a valuable one and should not be overlooked by others as a helpful learning activity for the entire staff.

Fourth, involve as many of the staff members as possible. If a small planning group had been in charge of the improvement program, the impact would not have been nearly as great. The size of San Pasqual made it ideal for involving the whole staff. Larger schools need to find strategies, like task forces or subcommittees, that insure that every staff member has some responsibility for meeting the improvement objectives.

Fifth, utilize the resources of outside consultants who can offer an impartial voice and help guide the improvement efforts. The county office services were particularly helpful in San Pasqual's case. An important role of the consultant, in addition to bringing resources and information, is to be a sounding board for the principal or other staff members.

Summary

In the past two years, San Pasqual has made great progress in implementing its school effectiveness program. The board of education, the superintendent, the teachers, and the parents seem to be in agreement regarding the goals of the school and district. The initial resistance by the staff has yielded and all are pulling in the same direction. The staff has seen the payoff from its efforts in terms of higher overall achievement for students in mathematics and language arts, and important gains for its Hispanic students. With knowledge of these gains, the staff completed the 1987–88 school year in high spirits. The challenge for the school next year is to carefully examine strategies for teaching reading and to explore ways to be more effective in teaching reading so that all students master the basic skills.

The school effectiveness process has shown the staff the importance of data and the value of using data to plan improvement objectives. The process has helped to target resources—people, material, funds, and staff development. Once resources and objectives are targeted, teachers will increase opportunities for student learning.

The staff of San Pasqual now realizes that school improvement is an ongoing process. They can celebrate how far they have come as well as work on the challenges that remain. The challenges are ones they know they can achieve. With careful planning and staff development the teachers know they can raise the achievement level of **all** students.

HELPFUL RESOURCES

RESOURCES

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Western Washington University
Bellingham, WA 98225
206/676-3578

American Indian Research Association & Development, Inc.
Stewart Tonamah, Director
2424 Springer Drive, Suite 200
Norman, OK 63069
405/364-0656

Appalachia Educational Laboratory
Todd Strohmenger
1031 Quarrier Street
P. O. Box 1348
Charleston, WV 25325
304/347-0400

Consortium on Educational Policy Studies
Prof. Martha McCarthy, Director
241 Education Building
Indiana University
Bloomington, IN 47405
812/855-4848

Council for Exceptional Children
1920 Association Drive
Reston, VA 22091
703/620-3660

ERIC/ Clearinghouse on Handicapped & Gifted Children
1920 Association Drive
Reston, VA 22091
703/264-9468

Handicapped Children's Early Education Program (HCEEP)
Rural Network
College of Education
Room 27, Horrabin Hall
Western Illinois University
Macomb, IL 61455
309-295-1634

Institute for Advanced Studies in Education
Victoria L. Bernhardt, Director
College of Education
California State University, Chico
Chico, CA 95929-0224
916/895-6165

Mid-Continental Regional Educational Laboratory (McREL)
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12500 East Iliff, Suite 201
Aurora, CO 80014
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National Clearinghouse of Rehabilitation Materials
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Oklahoma State University
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Stillwater, OK 74078-0435
405/744-5000

National Organization for Legal Problems in Education
3601 S.W. 29th Street, Suite 223
Topeka, KS 66614
913/273-3550

North Central Indian Education Technical Assistance Center
Phil Baird, Director
United Tribes Technical College
3315 University Drive
Bismarck, ND 58504
701/258-0437
800/437-8054

North Central Regional Educational Laboratory (NCREL)
Larry Friedman
1900 Spring Road, Suite 300
Oak Brook, IL 60521
708/571-4700

Northwest Regional Educational Laboratory (NWREL)
Steve Nelson
101 S.W. Main Street, Suite 500
Portland, OR 97204
503/275-9500

Rural Clearinghouse
Division of Continuing Education
111 College Court Building
Manhattan, KS 66505-6001
913/532-5560

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Austin, TX 78701
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The following are taken from "From One Rural School to Another" (1989) by Appalachia Educational Laboratory:

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